FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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Senate Would Exempt Some Retail Workers From Wage-Hour Law

WASHINGTON — An amendment exempting some retail feed employees from coverage of the wage-hour law was passed by the Senate April 19. The amendment, introduced by Sen. Milton Young (R., N.D.) and supported by Sen. Hubert Humphrey (D., Minn.) reads:

"(17) Any employee employed within the area of production (as defined by the secretary) by an establishment commonly recognized as a country elevator, including such an establishment which sells products and services used in the operation of a farm: Provided, that no more than five employees are employed in the establishment in such operations."

The amendment was the first successful one among numerous amendments proposed to trim down the extension of coverage of the administration's minimum wage-hour bill. Other amendments were defeated by senators supporting the administration by an average 2 to 1 vote. The bill itself will now go to a Senate-House conference committee to iron out differences between the House bill and the Senate bill.

Alvin E. Oliver, executive vice president of the Grain & Feed Dealers National Assn., said the amend-

(Turn to WAGE-HOUR, page 8)

Central Soya Buys Armo Mills in Texas

FT. WAYNE, IND.—Central Soya has purchased Armo Mills, Inc., Lockhart, Texas, it was announced by Dale W. McMillen, Jr., Central Soya president.

Mr. McMillen said, "We are happy to acquire Armo Mills, which will be our first plant facility in Texas and will enable our McMillen Feed Division to better serve the livestock and poultry industry in Texas.

"In order to offer a full line of feed to customers, it is anticipated that additional facilities will be added and plant capacity increased."

Armo Mills currently has a production capacity of 100 tons of feed per eight hour day, the announcement said. The mill was modernized in 1960 and now serves customers within approximately a 100-mile radius of Lockhart.

Western Poultrymen Told

New Decade Holds Good Outlook, But Adjustments Will Be Needed In Face of Severe Competition

By GEORGE L. GATES
Editor of Feedstuffs

LAS VEGAS — The new decade holds a good outlook for both production and markets, poultrymen attending the Pacific Dairy and Poultry Assn. convention here were advised.

Making the prediction was Dr. George L. Mehren, director, Giannini Foundation, and chairman, department of agricultural economics, University of California, Berkeley, in an address entitled "Yesterday, Today and Tomorrow."

However, the distinguished economist told the poultrymen that it will be necessary to adjust to changing technology and markets in the face of severe competition within all elements of the industry.

The presentation by Dr. Mehren was directed primarily at western poultrymen, but his comments and predictions are of interest and significance to persons in the feed and poultry industries in other areas as well.

Dr. Mehren, in one of the principal talks at the meeting, predicted a larger and brisker market for both poultry and eggs in the years ahead.

(Turn to WESTERN, page 96)

Ample Feed Industry Growth Predicted at Texas Convention

By MARTIN E. NEWELL
Feedstuffs Staff

DALLAS, TEXAS—There is plenty of growth ahead for the formula feed industry, W. E. Glennon, president of the American Feed Manufacturers Assn., Chicago, told the feed industry section at the annual Texas Grain & Feed Assn. convention in Dallas April 14-15. Not only is food demand increasing in the U.S. as population grows, but improving feeding techniques also are increasing the percentages of formula feeds being used, Mr. Glennon said.

The AFMA leader said that about 26 to 27% of all feed used now is formula feed and that this percentage is going up. Ultimately, it is hoped that formula feed will comprise 35 to 40% of all rations. Mr. Glennon added that study is needed to determine why formula feed percentages are not higher today than they are.

Government economists have forecast a formula feed tonnage of 50

(Turn to TEXAS, page 93)

CCC Board Okays Sale of Corn for Industrial Alcohol

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — The Commodity Credit Corp. board of directors this week approved the sale of 15 million bushels of corn from CCC stocks on a bid basis for production of certain types of industrial alcohol. There was no announcement of calls for bids,

(Turn to CORN-ALCOHOL, page 8)

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Market Influence Depends on Program

Industry observers indicated this week that any influences which could be expected to be felt in feed ingredient markets as a result of proposed surplus corn sales for industrial alcohol production depend on what sort of program the Commodity Credit Corp. has in mind.

Questions which need to be answered are: Just exactly how much corn will be released for industrial

(Turn to INFLUENCE, page 4)

Egg-Type Hatch Stays Ahead of 1960 Run

WASHINGTON—Hatchery production of egg-type chicks continues to run sharply ahead of output in the same period of 1960, but it is still well behind production in 1959 and 1958.

This is shown in the U.S. Department of Agriculture's latest hatchery production report.

Egg-type chicks hatched in March totaled 90,458,000 — up 26% from March, 1960, but 23% below the hatch of March, 1959. The hatch of egg-type chicks during the first three months of 1961 totaled 171,723,000 —up 29% from these months in 1960 but 20% below the production during the same months in 1959.

The number of eggs in incubators on April 1 indicated that the egg-type hatch in April will be larger than the relatively small April hatch of last year. For the U.S., eggs in incubators were up 14% from a year earlier. However, there was considerable variation among regions. New England showed an 18% decrease from April 1 last year. Percentage increases from a year earlier were: Middle Atlantic, 1%; east north central, 9%; west north central, 19%; south Atlantic, 31%; east south central, 38%; west south central, 20%; mountain states, 13%; Pacific Coast, 8%. (Also see accompanying table on egg-type chick hatch by states.)

The report early this year on farmers' intentions to buy baby chicks

(Turn to CHICK HATCH, page 93)

FEEDSTUFFS *Features This Week*

INTEGRATED HOG RANCH—The story of a "totally integrated hog ranch" in Iowa is presented on **page 18.**

HEAVIER BROILERS—Information on the efficiency of growing broilers to heavier weights is found in an article beginning on **page 26.**

FLEXIBLE SERVICE—A new $500,000 feed mill in Illinois provides service to producers through flexibility. **Page 34.**

ENVIRONMENT CONTROL—Broilers in environment controlled houses in an Alabama operation are setting growth records. **Page 62.**

EGG SHELL QUALITY—An article on the problem of egg shell quality begins on **page 70.**

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'New Vistas' Seen In Amino Acid Work at Wisconsin

ATLANTIC CITY, N.J.—Research reported here by two University of Wisconsin poultry scientists may open some new vistas for poultry nutrition research.

And such research might eventually lead to use of inexpensive sources of nitrogen to replace part of the expensive protein in practical poultry rations.

The scientists, W. R. Featherston and Dr. H. R. Bird, were reporting at meetings of the American Institute of Nutrition held here as part of

(Turn to 'NEW VISTAS,' page 4)

5% Gain Shown in Cattle on Feed April 1

WASHINGTON—On April 1, 1961, a total of 7,015,000 head of cattle and calves were on feed for market in the 26 major feeding states, according to the U.S. Department of Agriculture.

This number was 5% higher than the 6,671,000 head on feed in these states April 1 of last year, but down seasonally from the 7,587,000 head on feed Jan. 1, 1961. The number on feed declined 8% from Jan. 1 to April 1 this year, compared with a 7% decline during the same period in 1960.

About two-thirds of the increase shown in number on feed this April over a year earlier was in cattle weighing 900 lb. and over, reports the USDA.

North Central States 3% Higher—The number of cattle and calves on feed in the north central states April 1, 1961, totaled 4,962,000 head—up 3% from the 4,831,000 head on feed April 1, last year. Iowa, the leading state, was down 5%, but Illinois was up 5% and Nebraska was down slightly. All other states in this region, except Missouri, which was down 3%, were higher compared with a year earlier. (See table.)

(Turn to CATTLE ON FEED, page 8)

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The regional circulation of this issue is concentrated in the northwestern states

Top of the Hopper

THE BIG EXPANSION IN POULTRY production has caused a good deal of concern over possible long range developments, as well as immediate or nearby prospects for loss situations. There are some who have predicted that we may eventually get government controls in the poultry business, and the current sharp increases in output and reduced prices will strengthen the hand of those seeking controls.

Some people are said to have stepped up chicken and turkey production this year so that they could have a bigger base in the event of controls. Now this very expansion may be contributing to the possibility of generally unwanted controls.

Meanwhile, so far as eggs are concerned, recent drops in prices and prospects for further declines later are reported to have brought more caution among firms which contract with producers for egg production. Some contractors are apparently thinking twice before going ahead with new projects.

THE EXPORT MARKET for formula feeds and ingredients has been growing rapidly. A report issued by the Foreign Agricultural Service indicates that exports of feedstuffs in the fiscal year 1959-60 totaled nearly 419,000 tons. This compares with 309,000 the previous year and with an average of 99,000 tons for the five years beginning July 1, 1950.

MENTION IS MADE frequently of the fact that feed industry emphasis in recent years has been on a local or regional approach to feed production and service to nearby feeders. In this connection, it is interesting to note that the same sort of thing prevails in other industries, too.

For example, persons at a University of Delaware conference on food distribution were told that "the local touch is the hottest element in food retailing today. That goes for both chain and independent supermarkets. And it helps explain the steps toward decentralization and localization now being taken by many of the national and regional chains.

"Competition in food retailing has reached an all-time high. And because of what many people call a surplus of supermarkets, food retailers today must find ways to operate each store more effectively, more efficiently, more in terms of the consumer's interest—not the retailer's interest . . . "

The conference also was told that, in general in business, there is a growing trend away from mass marketing and toward regional and area market development.

It all has a familiar ring, doesn't it? As a matter of fact, one could just about substitute "feed" for "food" and "feed mill or store" for "supermarket" and have comments which might be heard at a feed gathering.

THERE NO DOUBT WILL BE considerably more integration or coordination in the poultry industry before there is less, but there are those who believe that we eventually may go back again to more specialization in some phases of the production-marketing chain.

Dr. A. William Jasper of the American Farm Bureau Federation, writing in the American Poultry Journal, points out that a California study of tomato grower-processor integration indicates that there are forces working toward less integration as well as toward a greater degree of integration between farmers and processors. This, too, he says, may become more evident in the poultry industry with the passage of time.

Growers of canning crops have had a long history of integrated growing and marketing operations. At one time, California canners controlled many

(Turn to **TOP OF THE HOPPER**, page 98)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Although week-to-week reports of activity have indicated generally steady business, formula feed trade around the nation continues to remain in an improved status compared with year-earlier volume.

Currently confusing to the trade are the fluctuating prices of most major ingredients—especially oilseed meals, animal proteins and millfeeds. This situation has held back purchasing in some instances because it has fostered "wait-and-see" attitudes.

Hog feed movement is reported to be strong. Cattle feeding has dropped off. And the trade in poultry feeds appears to be mixed. Turkey feed sales are gaining, due greatly to flock expansion. Observers say broiler producers are having a tough time making a profit because of record-low prices. Broiler feed movement remains good, however, because once birds are placed they must be fed.

The U.S. Department of Agriculture reports that the wholesale feedstuff price index advanced 2.2 points to 87.4 this week, compared with 78.6 a year earlier. This week's feed-grain index was pegged at 60.6, up from 59.9 a week earlier, but down from the 67.5 mark of a year earlier. The hog-corn ratio, based on Chicago prices, slipped to 16.3 this week from 16.9 the week before. It was 13.5 in the corresponding week a year ago. (Major feed market review and ingredient quotations on pages 94-96.)

Northwest

The industry prediction that significantly greater formula feed sales would be recorded in 1961 than in 1960 is certainly holding up in the Northwest. Nearly all feed men contacted this week reported that feed business is running ahead of year-earlier levels—as much as 30% in some instances.

Reaction to higher commercial feed prices varies in this region. For instance, one manufacturer said the current markups have had little or no deterring effect on producers' feed purchases; another said the bullish tone had much to do with dealers and feeders working off existing stocks.

Cattle feeds seem to be attracting the least interest right now. This is nothing surprising, however, because these feeds were moving in great volume a week or so ago because of heavy shipments on expiring bookings.

Reports indicate hog feeds are moving very well. Another area of high buyer interest is in turkey feeds; many more poults are being placed now than a year ago.

Northeast

The break in soybeans on April 18 scared some consumers away but later they became interested in the formula feed market and sales turnover exceeded the preceding week.

The trend to ready-mixed complete feeds continued and mixers expect the move will boost their tonnage.

There was a good run on egg mashes during the week and starting and growing feeds moved in satisfactory volume. Broiler prices, however, were hit hard and the weakness of the market is expected to bring a wave of liquidation. Eggs held about steady.

Running time of formula feed manufacturers held steady at 36 hours last week.

Southeast

All types of formula feed business in the Southeast were reported as being fair to very good this week. Manufacturers of broiler feeds said their running time was above normal. However, growers and manufacturers in the broiler business are discouraged. Those who are completely integrated and are good operators are having a hard time raising broilers on a break-even basis, and the others who are placing chicks and buying feed are operating at a loss.

North Georgia prices dropped 1¢ lb. this week, making the sale price 14½¢ f.o.b. the farms.

South Central

Feed men described business as being "moderately better" this week, and mill production gives evidence in support of this. For a month or more, most plants have been on a five-day basis although usually capacity output has neither been needed nor attained. This week, plants have been pushed harder and daily output stepped up. In some cases, overtime has been called for.

Some mills report better sales of pig starters and sow feeds this year than last, giving prospects for improved business ahead on hog feeds. Currently, hog feed sales seem to be a little lighter, which could mean that marketings have lowered the numbers on farms, but some think it more likely that the real reason is that larger quantities of comparatively cheap corn are being fed to heavy hogs.

A few hatcheries serving this area appear to be having trouble in moving their output of turkey poults. Reports are being circulated that distress poults have been on the market, some selling at 25¢, or even lower. The reason most often quoted for this is that some large buyers have cancelled orders due to uncertainty over the market.

Southern California

The formula feed business continues to show a definite production increase. Several mills specializing in poultry and turkey feeds are working 1 to 1½ shifts while still others now have 2 shifts operating 6 days a week.

Apparently egg production has slowed down in this area as local prices for medium eggs advanced 1¢ doz. f.o.b. the ranch. It is interesting to note the limited price spread between large and medium eggs; 29¢ doz. for the large vs. 25¢ for medium sized eggs. Usually the premium paid for large eggs is more than 4¢ doz. Naturally the trade welcomes the stronger market for medium sized eggs.

On the negative size, however, formula feed prices advanced this week as much as 4¢ cwt., an unusual circumstance caused mainly from increased costs of milo and protein ingredients. Soybean meal prices exceeded the $100 ton level forcing dealers and producers to at least consider possible formula changes including the usage of additional fish meal and cottonseed meal. To complicate matters, both of these ingredients also increased in price this

(Turn to **MARKETS**, page 99)

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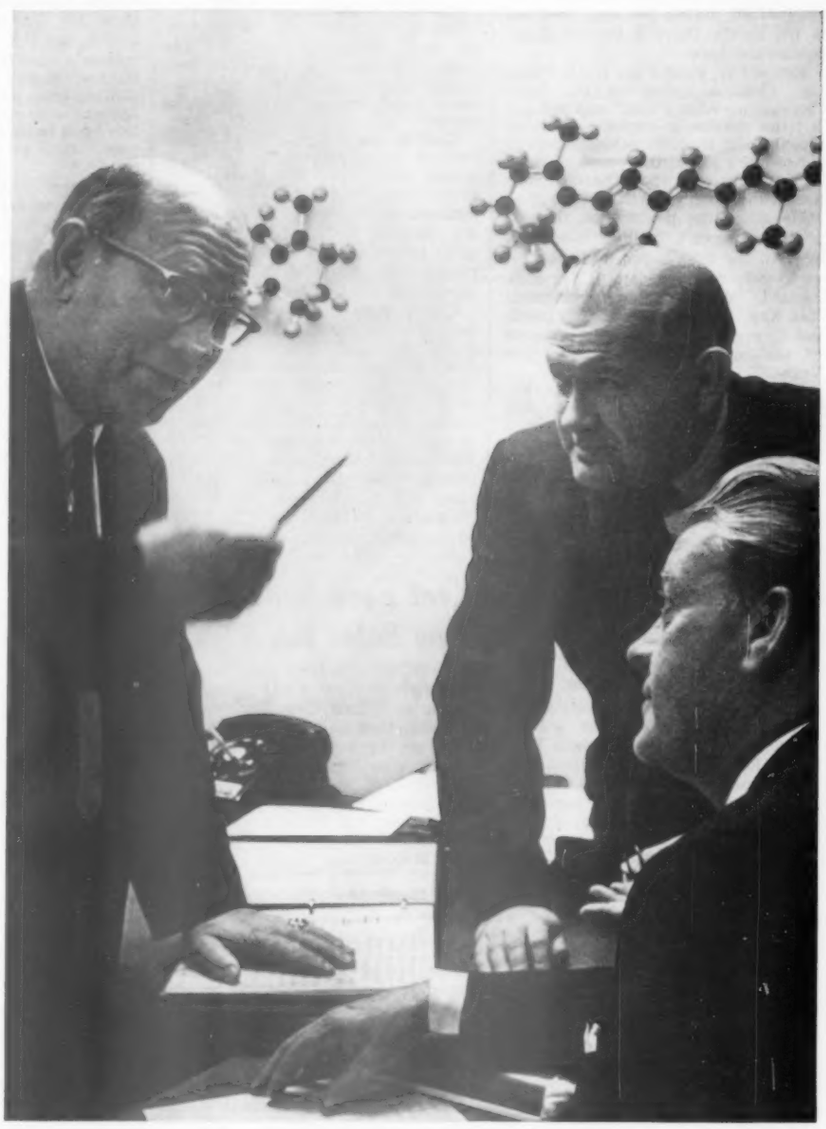
John R. Linsner—Dir. Tech. Services—Grad. U. of Ill. College of Agriculture. More than 12 years' exper. in all phases of feed formulation.

Richard W. Kerley—Coordinator of Sales, Production and Procurement. Degree in general agriculture. 12 years' experience in the feed industry.

Gerald J. Anderson—Tech. Services—M. S. degree in poultry nutrition. Was research technician at U. of Idaho and nutritionist in feed industry.

Dr. Heino Neelapaa—Coord. Spec. and Prod.—Was dir. of res. and nutr. in U.S. firms and abroad. Ph.D. nutr. and physiology, Bonn U., Germany.

Richard W. Kelley—Tech. Services—Was research asst. at U. of Mo. and at Kansas State. Master's degree in animal nutr., U. of Missouri.



Problem solving session—A Peter Hand customer (right) meets with Dr. Rasmussen for evaluation of his formulas and to discuss a palatability problem. Standing by is Harry White, Peter Hand Sales Mgr., with more than 20 years' experience in the feed and pharmaceutical fields.

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Difference Between Marketing, Selling Stressed at Meeting

LAS VEGAS — The difference between marketing and selling was emphasized during the egg program of the Pacific Dairy & Poultry Assn. convention here.

Edward W. Priebe, Jr., Kraft Foods Co., Chicago, spoke on the topic "Marketing With Profit" and pointed out the difference between planning for a profit through selling—getting rid of one's production—and marketing—finding out what the customer needs and supplying it.

He asked the poultrymen if most of them weren't "selling" — moving eggs to the first buyer or broker so as to get operating capital. He commented, "You can plan for a profit this way, but your chances of making it are as slim as your chances of making a killing here in Las Vegas."

To get into marketing of eggs, Mr. Priebe advised poultrymen to find out everything they could about a prospective customer: (1) What kind of products he uses, (2) how he uses them, (3) how they're packed and (4) why they're packed that way. He suggested, "That may lead to your finding out a lot of things you need to know about your own product.

"When you have all that information, then you can set up production to meet your customer's specific needs. And then you have a chance for a profit."

Example of Marketing

As an example of marketing, Mr. Priebe cited the experience of Kraft when it put a plant at Buena Park, Cal. He said that the Olson firm which now supplies eggs for the plant came up with a flood of questions: What egg products does Kraft use? What are Kraft's quality specifications? Where are you buying now? What kind of containers are you using? How do you handle them in your salad dressing plant?

"There were many more, of course, and we went into great detail explaining our needs.

"And this is how they've supplied those needs:

"They put in a plant at LaHabra, Cal., only 4½ miles from our plant at Buena Park. They arranged for enough commercial production to supply that plant in order to meet our quality specifications. They delivered fresh chilled eggs instead of frozen—no need for costly defrosting. They initiated bulk handling—in 450 lb. lots instead of 30 lb. tins. They offered a steady supply the year around—no need for storage charges. They used local California eggs—no need for heavy transportation charges.

"In other words, Olson found out what Kraft needs—and supplied it."

Quality Demanded

Mr. Priebe said that marketing is being pushed by two major forces: Quality and economics. He stated that customers are demanding im-

(Turn to DIFFERENCE, page 8)

BROILER HATCH UP SHARPLY

WASHINGTON — The tremendous expansion in broiler production is reflected in the figures in the U.S. Department of Agriculture's monthly hatchery report.

Production of broiler-type chicks in March totaled 209,146,000—up 18% from the same month last year. Output for the January-March period was 549.6 million, representing an increase of 11% over the same period of 1960. A big increase in the April hatch also was indicated. The number of eggs in incubators on April 1 was 25% greater than a year earlier.

Egg Prices Turn Up; Broiler, Turkey Tags Are Steady to Lower

NEW YORK — Prices in the nation's major egg markets trended slightly higher for the week ending April 19, the U.S. Department of Agriculture reports.

Paying prices for broilers and fryers held steady at mostly 14¢ throughout the South, but in Delmarva prices continued in a downward trend, averaging about ⅝¢ lower.

Trading on frozen ready-to-cook turkeys opened the week on a barely steady basis and failed to improve as the week progressed. Turkey price declines continued in major marketing centers. Hens were unchanged to 2¢ lower; fryer-roasters were unchanged to 1½¢ lower, and toms were unchanged to 1¢ lower.

USDA says egg price advances ranged from ½¢ to 1½¢ in most areas. This trend was evident even though consuming centers in both the Northeast and Southeast increased production and buying interest in those regions found offerings generally exceeding demand. In the Midwest, however, country points reported continued breaking activity that readily absorbed the heavier proportion of receipts usually shipped to consuming centers.

Kent Feed Reports New Sales Record

MUSCATINE, IOWA—G. A. Kent, president of Kent Feeds, Inc., Muscatine and Sioux City, Iowa, has announced that sales during the first half of the company's fiscal 1961, ending March 31, established new records. The six month period, October through March, saw sales climb 18.7% over the same period a year ago and 15.4% over the biggest first half in history.

"And March's increase of 23.4% over March of a year ago gives every indication of record sales ahead during the spring and summer," Mr. Kent stated. March was the biggest sales month in Kent history—11% greater than any previous month's sales record.

Kent Feeds will open a new feed plant at Waterloo in early summer.

FDA Clears Antibiotic Combination for Swine

WASHINGTON — The Food and Drug Administration has announced a food additive order clearing use in swine feed of a combination of the antibiotics oleandomycin and oxytetracycline (Terramycin).

The order was issued on a petition filed by Chas. Pfizer & Co., Inc.

The order stated that oleandomycin may be used in combination with oxytetracycline hydrochloride "as an aid in stimulating the growth and improving the feed efficiency of swine."

The quantity of oleandomycin activity permitted in the finished swine feed is the equivalent of 2 gm. per ton (2.2 parts per million, 0.00022%), and the permitted amount of oxytetracycline hydrochloride activity set at the equivalent of 8 gm. per ton (8.8 parts per million, 0.00088%).

The order also establishes zero tolerances for the antibiotics in the uncooked edible tissues or by-products of swine.

A previous food additive order cleared use of oleandomycin in chicken and turkey feeds.

As part of the new food additive order, FDA removed a requirement that the word "medicated" be used in labeling poultry feeds containing oleandomycin. Control officials had pointed out that feeds containing low levels of antibiotics for growth promotion should not be called medicated feeds.

Turkey Poult Hatch Shows Sharp Increase

WASHINGTON — The hatch of heavy breed turkey poults, heavy whites particularly, has continued to show big increases over a a year earlier, the U.S. Department of Agriculture's monthly hatchery report indicates. March production was up sharply from a year earlier, and eggs in incubators on April 1 indicated that the April hatch of all breeds would be larger than in the same month last year.

However, it was expected that, with the excess production the first part of the year, hatcherymen would be cutting back in the later months of the season.

The hatch of heavy white breed poults during March totaled 4,552,000 —up 70% from a year earlier. Other heavy breed poults, mostly broad breasted bronze, totaled 12,749,000—up 13%. The hatch of light breed poults totaled 1,064,000, representing a 7% increase over a year earlier.

For the first three months of 1961, the hatch of heavy white breed poults was up 70% from a year earlier; other heavy breeds were up 22%; and the hatch of light breeds was up 15%.

The hatch of poults of all breeds during the January-March period totaled 34,678,000—up a sharp 31% from a year earlier.

Heavy white breed turkey eggs in incubators on April 1 totaled 7,880,000, compared with 5,606,000 a year earlier. Other heavy breed eggs totaled 24,209,000, compared with 20,928,000. Light breed eggs totaled 2,293,000, compared with 1,800,000 a year earlier.

INFLUENCE

(Continued from page 1)

alcohol manufacture? What restrictions will be placed on movement of the distillers by-product feeds?

Although it appears the U.S. Department of Agriculture is serious about experimenting with the sale of government-held corn for the manufacture of industrial alcohol, the details of how CCC proposes to do this have not yet been announced. This makes it difficult for anyone to put his finger on how such a corn-use plan would affect the feed trade.

The latest word from Washington (see accompanying story) has it that up to 15 million bushels of corn would be sold by CCC on a bid basis —and that the price could be expected to be somewhere around 40@ 50¢ bu.

While some USDA officials were quoted as saying the recovery of feed by-products from the manufacture of industrial alcohol from corn would be "minor," some representatives of the distilling industry are opposed to programs involving the sale of surplus corn at reduced prices because "they would result in the production and sale of industrial alcohol at a cost below that of present producers and would hurt the distillers' feed market."

Tradesmen say 15 million bushels of corn converted to industrial alcohol would produce about 125,000 tons of distillers feed—or about a third of the present annual movement. Last year, according to distillers industry records, the volume amounted to about 350,000 tons. It's possible that a figure less than 15 million bushels will be involved. One source said he had been informed that USDA might restrict corn sales for industrial alcohol production to one million bushels a month.

Current USDA talks concerning the sale of government surplus corn at reduced prices for making industrial alcohol stem from a long-standing request by Publicker Industries, Inc., Philadelphia (Feedstuffs, March 25, page 4). Publicker has asked the government to sell the distilling firm 30 million bushels of corn at about one third the 1960 support level of $1.06 bu. so it can cancel a verbal agreement to buy 210 million gallons of molasses from Cuba. The supply of molasses from Cuba has been curtailed by embargo due to the strained relations between the U.S. and Cuba.

Some observers said they believe that surplus corn used for industrial alcohol manufacture should not be sold for less than 50% of the old-crop support price of $1.06 and that any distillers feeds produced from such conversion should be distributed by the government in "an orderly manner."

'NEW VISTAS'

(Continued from page 1)

the annual meetings of the Federation of American Societies for Experimental Biology.

Their research shows that chicks can use certain forms of the essential amino acids, or protein building blocks, to build different amino acids within the body. These particular forms had previously been considered not usable by chicks. The tests also suggest that chicks can use non-protein nitrogen for building non-essential amino acids.

Much experimental protein nutrition work is carried out with a half-and-half mixture of the two forms of essential amino acids—called the "L" form and the "D" form. Chemically, "D" and "L" forms of an amino acid are the same, but they're put together differently and used differently by animals. When amino acids are produced synthetically in the laboratory, they are in this mixed form.

Animals use only the "L" form to combine the essential amino acids into protein of muscle, milk or eggs. So scientists conducting research with the mixed "DL" amino acids normally use twice as much as they figure they need. This gives the required amount of the "L" form.

Mr. Featherston and Dr. Bird compared growth of chicks getting twice the needed amount of "DL" amino acids with growth of those getting only the required amount of pure "L" forms of the same amino acids.

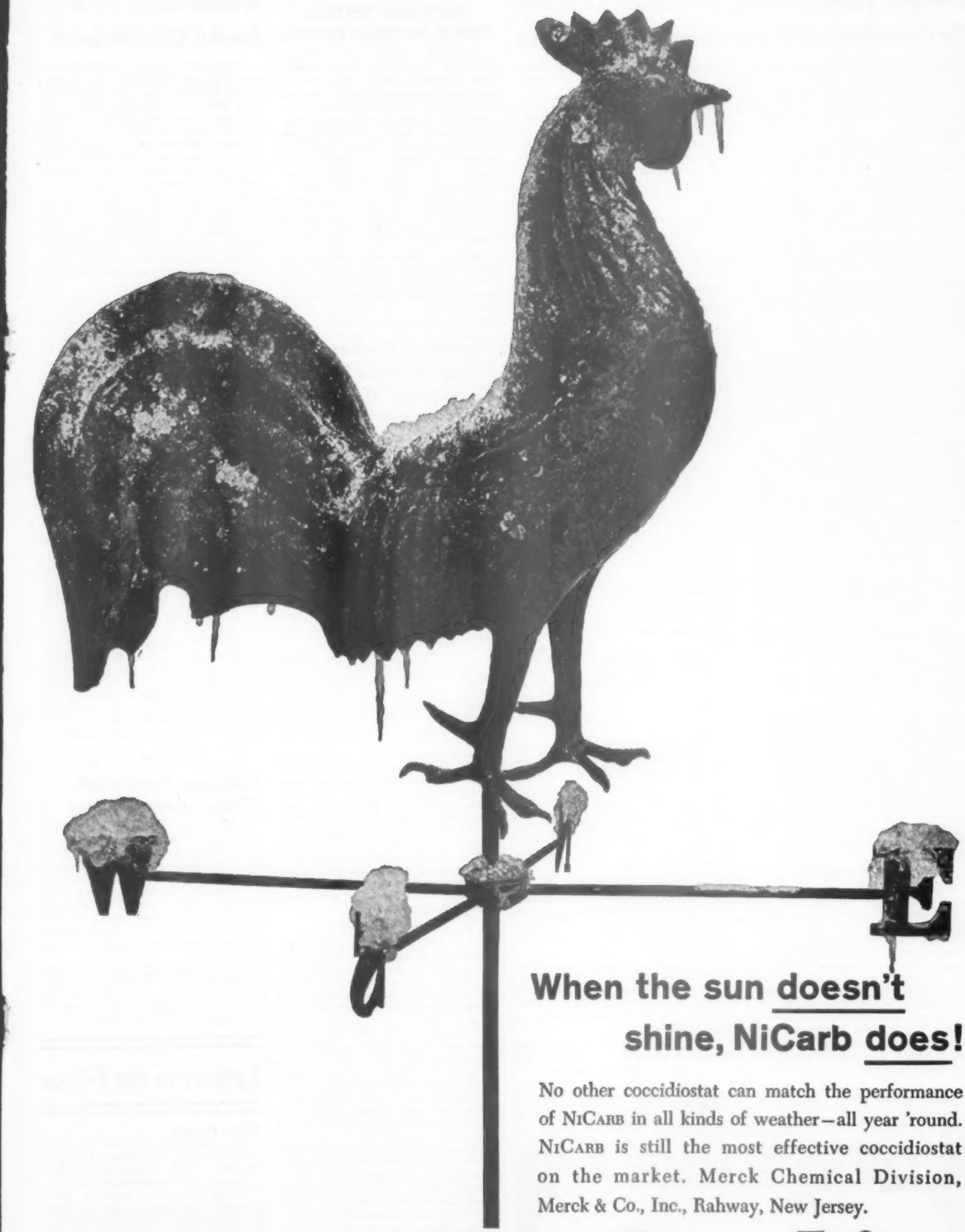
Only the so-called essential amino acids were included in the experimental diet. These are the ones which cannot be manufactured by the chick. Other amino acids—the "non-essential" ones—are also needed for building protein for body tissues. But the chick makes these from the essential amino acids provided in the feed.

The Wisconsin research men found that the "D" form of the amino acids was contributing quite a bit to chick growth. In one test, the chicks' rate of gain on the "DL" diet was twice the gain made by chicks on the "L" form.

Chicks on the "DL" form excreted only a little more nitrogen than those on the "L" diet, even though they had consumed twice as much nitrogen. Chicks that got the "DL" form also had higher content of the non-essential amino acids in the blood stream. These were not provided in the diet.

From these facts Mr. Featherston and Dr. Bird have concluded that in these experiments the "D" forms of essential amino acids were the major source of nitrogen for the chick's manufacture of non-essential amino acids within its body. It is important to take account of this in future research on poultry nutrition with amino acid mixtures, they pointed out.

This research also suggests that simple nitrogen compounds—such as urea or ammonium salts—are usable in a like manner. This could possibly lead to a less expensive form of nitrogen to replace part of this protein in practical poultry rations. But further tests are needed to establish this, the research men warned.



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Present Turkey Trend Will Bring Controls Or Coordinated Production, Speaker Says

PIQUA, OHIO—The turkey industry's "progressive madness" will bring one of two things: Some type of controlling mechanism with real teeth in it or coordinated production programs.

That was the prediction of John Hough, editor, Turkey World, at the recent turkey clinic of Yieldmor Feeds held here.

Oakley Ray, director of market research, American Feed Manufacturers Assn., told the group he was optimistic regarding the long run view for the turkey industry although the immediate outlook is not bright.

The program of the clinic also featured question-answering panels on the following subject areas: Management and housing, nutrition and feeding, marketing and disease control.

Coordinated Production

Mr. Hough said he believes that controls are inevitable unless the turkey industry solves its own dilemma of overproduction. Thus he devoted his talk entitled "The Changing Turkey Industry" to discussing programs of coordinated production.

He reminded his listeners that they were not simply in the turkey business—their basic occupation is producing food. "Before we can make a nickel of profit, someone in the marketing chain must be sure he can profitably sell our birds to a consumer," he said.

"In this matter of retailing, our vital competition is not the other turkey growers or any other segment of our industry. Our real competition is beef, pork, chicken, lamb, eggs and all other meat substitutes.

"An ever-increasing population doesn't guarantee an ever-increasing market for turkeys. Other meats and their substitutes that the consumer wants could quickly take away any gain in per capita or total consumption."

Discouraging strict price competition, he said, "Low prices are a most expensive way to build an industry.

"Remembering that retailing is vigorously competitive, we must realize that grocery firms are constantly striving to improve their buying power with their suppliers. Such efforts to achieve quantity purchasing have put immense emphasis on the decrease of procurement costs and product prices.

Specification Buying

"Following in this vein, chain buyers are resorting to what we call specification buying. To put it simply, a chain buyer gives a processor a firm order for definite sizes and quantities of birds for specific delivery dates. Knowing he cannot fill the order with the production of independent producers (who sell poults and market when they wish), the processor must make arrangements to get the required number of birds grown. The next step, of course, involves lining up a feed company and hatchery. Further, there should also be contracts to guarantee delivery for the different supplies necessary to fulfill the commitments.

"As an independent grower, you may rebel against this type of operation, but the far-seeing processor doesn't care. He wants and needs this sales outlet, and he'll see that the birds are grown even if a feed company has to raise them. This is already happening in a number of areas."

Stating he believes coordinated production planning will continue to increase because of industry pressure, Mr. Hough stressed the importance of contractual arrangements between all parties concerned. Adherence to each contract is vital, or the entire operation might collapse, he said.

He also suggested having one man as the coordinator of the whole production program. He would work with the chain buyer and then be responsible for scheduling production through the hatchery, feed company, processors and growers. His job would entail establishing the number of supply flocks needed and determining contracts, according to the plan. He would function as sort of an executive secretary for a board of directors comprised of feed man, processor, hatcheryman, buyers and represented growers.

Mr. Hough commented, "Since large retail store buyers can be selective in matters of quality, service and price, their ultimate suppliers are chosen for their ability to give the kinds and quantities of products that are best adapted to a mass food marketing system. In this respect, small farmers are at a definite disadvantage when dealing with large buyers.

"Unless growers can cooperatively schedule a planned production program and market through an outlet that collects and sells a large accumulated production, they have little or no place in the modern marketing picture.

"Organizations that are producing for production's sake will suffer the misery of monetary failure.

"This industry is bursting with opportunities, but you cannot sit still and watch others move. Soon you will be shut out by more aggressive areas. You all must make the decision to either get in or quit fiddling around and get out."

Bright Future

In his talk entitled "The Turkey and Feed Industry—Today and Tomorrow," Oakley Ray of AFMA cited statistics from recent findings of the Poultry Survey Committee.

He warned that with turkey production expected to increase 15%, prices during August-September will average 4-5¢ below the 25-26¢ average for the corresponding period a year earlier.

Mr. Ray said that the immediate outlook is not bright but added that

(Turn to **TURKEY**, page 98)

SPEAKERS' TABLE—Relaxing following dinner at the recent Yieldmor turkey clinic at Piqua, Ohio, are these persons at the speakers table. From the left, they are: George Gibson, Yieldmor's general manager; John Hough, editor, Turkey World; Sumner Lyon, Yieldmor's president; Oakley Ray, Market research director, American Feed Manufacturers Assn.; Howard Wildey, secretary, Ohio Turkey Assn., and Dr. A. R. Winter, Ohio State University poultry department head.

SOUTHERN TURKEYS BRING PREMIUM PRICES

CHARLOTTE, N.C.—Turkeys grown in the South, once frowned upon by buyers, have been so improved in consistent quality, they are now bringing premium prices.

William Griffin of Marshville Turkeys, Monroe, N.C., one of the South's largest buyers and sellers, made this statement before the turkey commodity committee meeting of the Southeastern Poultry & Egg Assn.

The South can now be proud of the birds it is producing, he said. He said prices range from 2-4¢ lb. over other sections, including Minnesota.

Another reason why southern turkeys are being sought is the overnight delivery facilities available from the South to northern markets, he said.

Southeast Turkey Group Opposes Federal Regulatory Measures

By Special Correspondent

CHARLOTTE, N.C.—Federal regulatory measures, including production controls, marketing orders and enabling acts for the turkey industry were opposed by the Southeastern Poultry & Egg Assn.'s turkey commodity committee at a meeting in Charlotte April 17.

At the same time, the committee took cognizance of the fact that this year's crop will be several weeks earlier than usual and urged immediate marketing of breeder hens in view of the earlier crop and "abundance" of birds.

It was pointed out that the next three months offer a good opportunity to dispose of breeder hens because of interest being expressed by chain stores in promoting hens at "very attractive prices" to the public.

The committee discussed at great length, and in detail, the three bills now pending in Congress seeking controls. Unanimous opposition to all three of these measures, which would bring about governmental involvement, was expressed, and the committee requested SEPEA to oppose these bills. One of the bills is sponsored by the National Turkey Federation (S. 1389). The other two measures are H.R. 955 and H.R. 159.

The committeemen also noted that some states favoring this type of legislation two years ago have done an about-face and this year are opposing the measures.

Grading Designation

Recommendation was made to the effect that the committee favor grading designation by name rather than by letter and the group also reconfirmed its opposition to mandatory grading which has been proposed by some groups.

A trend toward providing store-door delivery of birds by producers was noted. The retail outlets, especially chains, like this service because it eliminates the necessity for large storage centers, it was pointed out.

Movement of dressed turkeys at present is slow, the committee reported.

The committee also recommended further promotional efforts in contacting army buyers in view of the present trend of army purchases based on cook-out regarding nutritional and portion controls.

The commodity committee meets regularly to review the turkey situation which is the basis of the association's activities for the coming months, according to Harold Ford, secretary.

JOINS BOARD OF TRADE

TOLEDO, OHIO — William R. Thompson, Jr., traffic manager for the Rice Grain Co., Toledo, has been elected a member of the Toledo Board of Trade.

Walnut Grove Notes Record Quarter Sales

ATLANTIC, IOWA — Consolidated net sales of $5,446,059 for Walnut Grove Products Co., Inc., with general offices in Atlantic, during the first quarter of fiscal 1961 were 65% above sales of $3,295,606 for the same quarter a year earlier, J. J. O'Connor, company president, announced at the feed manufacturing firm's annual stockholders meeting.

Net earnings after taxes for the first quarter, ended Feb. 28, were $200,623, Mr. O'Connor said. This compared with $36,280 for the same period a year earlier. The president told stockholders that the first quarter sales established a new sales record for a single quarter.

Mr. O'Connor went on to say that March, 1961, the first month of the second quarter was the largest single month on record and showed a sales volume increase of 24.3% over February, 1961. "We are confident that new sales records will be established again in April and during our second quarter," he said.

"The livestock picture for 1961 is bright, as we indicated to you that it would be," he said in a letter to shareholders with the first quarter report. "The swine industry continues to be most profitable, and the long-range outlook in the beef industry is most promising.

"Our new scientific swine feeding program, introduced in September, 1960, continues to create new customers for us and was important to first quarter results. It will continue to effect increased sales and earnings during our second quarter and throughout the year.

"A record sales volume in our first quarter and the outlook for the remainder of 1961 presents every appearance that we will enjoy our biggest year in sales and earnings on record. This will result not only from the more favorable livestock picture and our emphasis on research, but also on our awareness of the importance of our continuing program to

(Turn to **WALNUT GROVE**, page 98)

Chicago Feed Club Plans Dinner Dance

CHICAGO — The Chicago Feed Club has announced plans for its annual spring dinner dance scheduled for April 29 at the Evanston Country Club, 4401 Dempster St., Skokie, Ill.

Dress for the event, which is to include a cocktail hour at 6:30 p.m., dinner at 8 and dancing from 9:30 to 1 a.m., is cocktail or dinner dresses for the ladies and "Sunday best" for the men.

Reservations, which must be made in advance, may be obtained by writing Landon Hoyt, Bemis Bro. Bag Co., 110 North Wacker Drive, Chicago 6, Ill. Tickets are $10 per person.

Letters to the Editor

To the Editor:

The following telegram was sent to Secretary of Agriculture Freeman, President Kennedy and several U.S. Senators and Representatives:

"While Congress legislates prosperity in minimum wage and farm proposals, bear in mind that on today's market a 3-lb. broiler chicken at 14¢ lb. or 42¢ each at the farm will not pay the waitress a tip on a chicken dinner in Washington, D.C. Also, three chickens will not buy one hour's minimum wage at proposed levels with fringe benefits. As we legislate, let's not further forget the forgotten man in our economy—the small farmer who produces no basic supported crops."

Steele Wright, President
Texas Farm Products Co.

USDA Official Believes Condemnation Problems Will Be Smoothed Out in '61

LAS VEGAS — The bumpy road that mandatory federal inspection of processed turkeys has traveled in the two years since its inception is gradually leveling off so that the ride for the grower, the processor and the government should be smoother in the future.

This is the impression implanted by a representative of the U.S. Department of Agriculture at the annual convention of the Pacific Dairy & Poultry Assn. here April 13-14.

High rates of condemnations by inspectors at processing plants have worn a sore spot in the poultry industry, but Hermon I. Miller, director, poultry division, Agricultural Marketing Service, USDA, believes that mandatory federal inspections have benefited the turkey trade—and that inspection problems of the past two years were principally caused by: (1) The practice of expanding plant processing facilities, (2) the introduction of new chilling methods and (3) condemnations.

What's Ahead?

How about poultry inspections in the future? Here's how Mr. Miller answered this question:

"First, we feel that the (federal) inspection staff is well indoctrinated by this time and that the future operations of the program will be better understood by industry and operations will be smoother due to the fact that both our personnel and plant personnel have greater experience.

"Second, in an ever increasing number of instances, inspection has proven of immeasurable service to the industry (1) in discovering disease problems at very early stages and assisting in guiding research into channels which will be most helpful, and (2) in working with plant management on improving operating procedures which result in mutual benefits.

"Third, I think as years pass, condemnations will be decreased because of the greater attention on the part of producers to the factors which contribute to high condemnations.

"Fourth, I am confident that the regulations developed for the inspection program can continue for many years with only minor adjustments."

Mr. Miller noted that inspection under the mandatory act which went into effect Jan. 1, 1959, was not a new experience to many turkey processors because about 75% of the turkeys sold off farms were inspected under the voluntary program.

"Dynamic Industry"

"We, of course, are aware of the problems which the turkey industry has experienced under the poultry inspection program during 1959 and 1960," he stated. "The turkey industry is a dynamic one, and many of the problems were due to this characteristic.

"There are many examples of instances where processing plants have attempted to expand their processing volume to the extent of doubling it without expanding the floor space available. I could cite examples where this has led to severing good relationships between inspection personnel and management. Management and inspection personnel had worked together in many of these establishments for many years, but by attempting to expand output, without expanding available space, problems inevitably developed resulting in condemnations, improper care of the product, etc., which more often than not led to conflict between inspection personnel and plant management.

"I realize that the geographical pattern of turkey production has shifted to some extent, and that additional processing facilities were needed to meet the growth of the industry, but I would hope that in the future the problems created in those plants without additional floor space can be corrected, and that management will be aware of the problems which can be created when considering expanding output without expanding space."

Moisture Tolerance

Mr. Miller noted that USDA determined after a two-year study that a maximum moisture tolerance of 6% on heavy classes of poultry and 8% on light classes was reasonable.

"Although considerable attention has been focused on the moisture problem due to the relatively new mechanical chilling systems, we found the problem also was with us with the regular tank chilling systems if excesses were permitted," he said. "We hope that we have made considerable progress in stabilizing the moisture uptake and retention in frozen turkeys during 1960. However,

(Turn to CONDEMNATION, page 98)

Dr. E. P. Singsen

Dr. R. W. Luecke

Dr. W. H. Hale

Dr. B. S. Pomeroy

Pfizer's Dr. Jarowski To Outline Nutritional Concept at Conference

CHICAGO—Some 300 agricultural scientists, feed manufacturers and other agricultural leaders of government and industry are registered to attend the ninth annual Research Conference of Chas. Pfizer & Co., Inc., at the Conrad Hilton Hotel, Chicago, May 7.

The meeting is sponsored annually by the Pfizer Agricultural Research and Development Center, Terre Haute, Ind.

Dr. Charles I. Jarowski, director of pharmaceutical research and development for Pfizer, as one of the conference speakers, will discuss a nutritional concept that relates optimum protein efficiency in man and animals to the dietary intake of essential amino acids and the amounts of these "building blocks" found in the blood plasma.

Dr. Jarowski's concept, recently advanced at a Pfizer research seminar, is proposed as a way to determine proper dietary requirements of essential amino acids in order to achieve optimum protein efficiency or "ideal" healthful growth and development in both man and animals.

Dr. E. F. Bartley

Dr. C. K. Whitehair

Other Speakers

Speaking on current research in poultry nutrition at the Pfizer session will be Dr. Edwin P. Singsen, head of the poultry science department, University of Connecticut. Dr. Singsen will discuss the effects of controlled feeding on growth and efficiency in poultry, and new research evidence on important feed ingredients including vitamins A and E and calcium and phosphorus.

Recent advances with water soluble vitamins, proteins, amino acids and minerals in swine research will be reviewed by Dr. R. W. Luecke, head of the department of agricultural chemistry, Michigan State University.

Joining Dr. Luecke on the Pfizer program as guest speakers will be Dr. W. H. Hale, animal science department, University of Arizona, who will discuss recent ruminant nutrition developments, and Dr. B. S. Pomeroy, division of veterinary bacteriology, University of Minnesota, who will present recent research in avian diseases.

Dr. C. K. Whitehair, department of veterinary medicine, Michigan State University, will speak on veterinary medicine research, and Dr. E. F. Bartley, dairy husbandry department, Kansas State University, on recent dairy nutrition findings.

Reviewing Pfizer research with Dr. Jarowski will be Dr. H. G. Luther, scientific director of animal health and nutrition for the firm. He will discuss trends in international agricultural research. W. M. Reynolds, manager of the Pfizer Agricultural Research and Development Center, will review recent developments in antibiotic potentiation studies.

Entries Received in Definitions Contest

KANSAS CITY—Entries are now coming into Feed Production School headquarters for a feed industry definitions contest which was announced recently in connection with the 1961 school.

The Production School definitions committee has prepared more than 50 tentative definitions covering finished feeds, feeds in process and processing terms. Persons in the industry are invited to obtain copies of the tentative definitions and try to improve them. For each improved or rewritten definition accepted by the committee, the winner will receive a $10 certificate redeemable on Production School registration and expenses.

The first definition entered in the contest came from Floyd M. Garner of S. Howes Co. He suggested changes in the definitions for scalping and aspiration.

Copies of the tentative definitions are available from: Definitions Committee, Feed Production School, Inc., 20 W. 9th St. Bldg., Kansas City 5, Mo. Closing date for the contest is June 1.

Honeggers' Reports Sales, Profits Up

FAIRBURY, ILL. — Sales of $11,218,458.51 for the first nine months of the current fiscal period with net profit after tax of $207,455.68, or 70¢ per share, have been reported by Honeggers' & Co., Inc., of Fairbury. This compares with sales of $10,517,079.05 and profit of $65,703.44, or 22¢ per share, for the same period last year.

While sales are up $700,000, expenses are down $48,000, according to a report issued to stockholders. Working capital of the company has been improved from $1,243,537.12 to $2,460,323.34.

The company is a producer of poultry, hog and cattle feed and farm buildings.

E. F. Dickey, president of the company, states that current earnings are consistent with company history and that last year's poor earnings were the result of depressed conditions in the livestock and poultry industry which the company serves. He also said that improved sales and earnings have been achieved through a reorganized sales department and streamlined operational procedures aimed specifically at cutting costs.

Mr. Dickey states that feed tonnage was up 16% for the third quarter over last year and that sales were running 40% ahead of last year through the first half of April. The company's fiscal year, which ends June 30, is predicted by company officials to be the best in the company's history.

May 5 Is Date for Arizona's Poultry Industry Field Day

TUCSON, ARIZ.—Topics of interest to the poultry industry are plannned for the fifth annual Poultry Industry Field Day at the University of Arizona May 5.

The day-long event will feature 10 speakers including a two-man panel that will discuss "Poultry Health Problems in Arizona."

Morning speakers include Dr. Harold E. Myers, dean, College of Agriculture, University of Arizona, whose talk is entitled "Looking Ahead," and Dr. J. Witt, department of entomology, who will discuss "Pesticide Residue, a Concern to Poultrymen?"

Members of the panel who will discuss Arizona's poultry health problems are Dr. W. Pister, department of pathology, and Dr. Ned W. Rokey, Mesa Animal Pathology Laboratory, both of the University of Arizona.

Jack Hilton, federal-state supervisor, U.S. Department of Agriculture, Agricultural Marketing Service, poultry division, Los Angeles, will speak on "Breakout Score As a Measure of Egg Quality in Commercial

(Turn to FIELD DAY, page 99)

DENVER FIRM INCORPORATES

DENVER—Kellogg Grain Co., 4661 Brighton Blvd., has filed articles of incorporation, listing $249,000 authorized capitalization to engage in the general grain elevator business. Incorporators and initial board of directors include J. E. Kellogg, Charles W. Sheldon, Jr., and Richard H. Glasman.

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Sanderson Bros., Miss Goldy Elect Officers

LAUREL, MISS.—D. R. Sanderson has been elected chairman of the board and president of the recently merged Sanderson Brothers Farms, Inc. and Miss Goldy, Inc., officials of the new company announced.

In the organization, Joe Frank Sanderson becomes executive vice president; Dewey Sanderson, vice president; and F. Andre Wise, secretary and treasurer.

J. D. Wise will join the four principal officers on the Sanderson Brothers-Miss Goldy board of directors, and will serve in a special administrative capacity.

Sanderson Brothers Farms, Inc., a large broiler producing enterprise with headquarters in Laurel, and Miss Goldy, Inc., a food processing operation with headquarters in Hazlehurst, were officially merged March 16 to form one of the South's most complete broiler businesses.

The Sanderson operation has breeder flocks, hatcheries, a modern new feed mill located at Raleigh, Miss., and large broiler growing interests.

The Miss Goldy enterprise includes a poultry processing plant—with food freezing facilities, an experimental food cooking operation and a by-products plant.

"The merger was a natural move which gives us a complete broiler producing and processing business," D. R. Sanderson, the new board chairman, stated. "The new organization will allow us to concentrate on marketing, quality control and product development."

WHITMAN BOARDMAN DIES

TOLEDO, OHIO—Whitman A. Boardman, 74, formerly of Toledo, died in a Fontana, Cal., hospital. Mr. Boardman retired in 1945 as secretary-treasurer and manager of the East Side Iron Elevator Co., now known as the Cargill East Toledo Elevator. Mr. Boardman for many years served as treasurer of the Toledo Board of Trade, and secretary of the old Toledo Port Commission.

CORN-ALCOHOL

(Continued from page 1)

however, and it appeared that a definite program had not yet been established.

CCC's board specified in its decision that to be eligible for bid acceptance bidders must have a previous history of using molasses as a base for alcohol production.

Information indicates that the U.S. Department of Agriculture expects bids for the 15 million bushels of corn to run between 40@50¢ bu. However, it has been learned that the White House—even though it had previously delegated authority to the CCC board in such matters—may still retain veto power over this deal in view of the uncertain outlook in the Cuban crisis.

It was noted also that the total quantity of grain will be reduced to the extent that any successful bidder for CCC corn may subsequently obtain off-shore molasses.

There has been some concern in feed industry circles that this low-price corn from CCC might become a market factor. But USDA officials told this reporter that the recovery of feed by-products in the type of alcohol production involved is a "negligible" factor in over-all markets. (However, as noted in an accompanying story, there was concern about distillers' feed markets.)

A USDA task force previously reported to Secretary of Agriculture Freeman on this request to make CCC corn available at substantial discounts. The committee, it was learned, had rejected the proposal.

It is understood that any contracts made by successful bidders in this corn-for-alcohol deal will be subject to renegotiation.

WAGE-HOUR

(Continued from page 1)

ment would exempt from coverage many retail feed employees who otherwise would have been included for the first time by the new wage-hour legislation. The association executive indicated that the amendment did not broaden the exemption as widely as that requested by the national association.

The original statement by the Grain & Feed Dealers National Assn. opposing extension of coverage to feed employees proposed an amendment which would have broadened the exemptions.

Opposition Explained

The statement, which was sent individually to each U.S. senator on Monday, April 17, reads as follows:

"The Grain & Feed Dealers National Assn. is in opposition to those bills before the Senate which would extend coverage of the Fair Labor Standards Act, where such extension would reach employees of country grain elevators and retail feed stores, presently exempt, for these reasons:

"1. Increased cost of operation in a retail feed store or country grain elevator must be met, obviously, either from the net income of the operator, or through increased costs passed on to the farmer and feeder. Farmers and feeders are almost alone the customers of both establishments. In a great many instances the country grain elevator and the retail feed store are the same establishment. In some states the great majority of retail feed outlets are in country elevators.

"2. It will be conceded that if the average country elevator operator and retail feed dealer is unable, or unwilling, to absorb increased costs, such increases must be passed back directly to farmers and feeders at a time when such farmers are already in an unfavorable economic situation.

"3. Grain that has ripened in the field must be harvested within its limited time, and harvesting commonly includes marketing at the nearest country elevator. The grain producer, who also is a feeder, is forced to correlate his hauling of grain to market with his back-haul of feeds within the same days and weeks. As a result, the country grain elevator and the retail feed store are subject to unique pressure of long hours of customer demand. This is the still unchanged fact, which in 1938, lay behind the decision of the Congress to exempt employees this close to agriculture.

"4. Labor in the country grain elevator and retail feed store is drawn from the same source as farm labor. What affects one affects the other. A compelled increase of elevator and feed store labor rates would automatically be reflected in farm labor costs.

"5. Extension of wage-hour legislation to retail feed stores would result in unemployment, as it appears that it would be impossible for the employers to pass this revised cost to producers already suffering from a cost-price squeeze.

Amendment Support

"The Grain & Feed Dealers National Assn. would support an amendment to Section 13(A) of the Fair Labor Standards Act which would exempt from coverage under the act any employee employed within the area of production (as defined by the secretary) by an establishment commonly recognized and operated as a country elevator, including one which sells products and services used in the operation of a farm."

Both Democrats and Republicans accepted the amendment, and the Grain & Feed Dealers National Assn. hopes that the five-employee maximum will be increased in the conference committee.

DIFFERENCE

(Continued from page 1)

proved quality because of consumer brands which are distributed nationally and must have uniform quality.

He commented that the only way a food manufacturer can put out uniform products is to put in uniform ingredients. He said that manufacturers' specifications usually include: Solids, ingredients, bacteria, coliform, yeast, mold, pH, color, salmonella, moisture, freezing temperatures, whip test, bake test, particle size and package.

"If you think these specifications are just a lot of words, let your product fail to meet them on just one point and find out how fast your eggs are rejected," he said. "The customers' demand for improved, uniform, dependable quality is pushing us into marketing.

Economic Push

"Besides that, there's the economic push."

He pointed to higher wage rates, fringe benefits for employees, lower productivity of seasonal labor and increased costs for containers, freezing, freight and interest.

"Everything's higher—and at the same time you're pushed to produce a better product for less money," he commented. "That's why profit-minded egg operators are being forced into true marketing.

"Can you see how hopeless it is to expect profits from a company that just sells . . . that just moves volume . . . that just gets rid of its production?

"Profits come naturally to the business that does a real job of marketing . . . that starts with the customer's viewpoint and works back to production. That's real marketing. And it's marketing with profit.

"You can do it! And if you're going to stay in the egg products business you'll have to do it. There's no alternative."

CATTLE ON FEED

(Continued from page 1)

Western States Increase 9%—Cattle and calves on feed April 1 this year in the 11 western states totaled 1,692,000 head, compared with 1,554,000 head April 1, 1960—a 9% increase. California, the leading western state, was up 16%; Colorado, the second ranking western state, was 1% higher; and Arizona, third in rank, showed a 21% increase from last April 1. Other increases ranged from 2% in Montana and Oregon to 9% in New Mexico. Idaho was down 2% and Wyoming and Nevada were both down 6%.

Placements Down 3%, Marketings Unchanged—Cattle and calves placed on feed during January through March this year totaled 2,692,000 head, 3% less than the 2,762,000 head during the same period in 1960. Shipments of stocker and feeder cattle into eight Corn Belt states (for which data are available) during January and February this year were up 22% from the same two months in 1960, reports the USDA.

Fed cattle marketings during January, February and March, 1961, amounted to 3,264,000 head, the same as during these three months in 1960. Marketings were down 1% in the north central states, but were 3% higher in the western states.

The number of beef steers and heifers (grading prime, choice and good) sold out of first hands for slaughter at 12 major livestock markets during January through March was 3% lower than the same period in 1960. These data do not include direct sales to packing plants, mixed lots of steers and heifers, and some deliveries bought on prior contract.

Cattle and Calves on Feed by Quarters April 1, 1960, Jan. 1 and April 1, 1961, with Comparisons*

State	Apr. 1, 1960	Jan. 1, 1961	Apr. 1, 1961	Apr. 1, 1961, as % of Apr. 1, 1960
	——1,000 head——			%
Pennsylvania	76	89	78	103
Ohio	184	209	191	104
Indiana	142	195	170	105
Illinois	653	729	686	105
Michigan	129	126	134	104
Wisconsin	121	121	122	101
Minnesota	434	478	473	109
Iowa	1,650	1,495	1,568	95
Missouri	249	297	242	97
No. Dakota	100	175	150	150
So. Dakota	232	289	274	118
Nebraska	680	690	677	100
Kansas	237	337	275	116
N. C. states	4,831	5,141	4,962	103
Oklahoma	49	74	65	133
Texas	161	254	218	135
Montana	57	77	58	102
Idaho	115	143	113	98
Wyoming	47	56	44	94
Colorado	359	414	362	101
New Mexico	45	53	49	109
Arizona	207	298	251	121
Utah	50	71	54	108
Nevada	17	30	16	94
Washington	100	106	107	107
Oregon	55	69	56	102
California	502	712	582	116
Western states	1,554	2,029	1,692	109
26 State total	6,671	7,587	7,015	105

*Cattle and calves on feed are animals being fattened for the slaughter market on grain or other concentrates which are expected to produce a carcass that will grade good or better.

Weight of Cattle on Feed—Of cattle and calves on feed in the 26 states April 1, those weighing under 500 lb. accounted for 7% of the total—the same as April 1, 1960. The 500-699 lb. group made up 35% of the total this year, compared with 33% a year earlier.

The 700-899 lb. group accounted for 27% of the total compared with 30% a year earlier. The number weighing 900-1,099 lb. at 24% was unchanged, while the 1,100 lb. and over group comprised 7% of the total compared to 6% last year.

A breakdown of the April 1 number on feed in the 26 states by weight groups shows a smaller number on feed than a year earlier in the 700-899 lb. group. All other groups showed an increase over a year earlier in number on feed.

The number weighing less than 500 lb. totaled 475,000 head April 1—3% above a year earlier; the 500-699 lb. group totaled 2,447,000 head—up 10% from a year earlier; the 700-899 lb. group accounted for 1,892,000 head—down 6%; the 900-1,099 lb. group at 1,710,000 head was 6% above last year; and the over 1,100 lb. group at 491,000 head was 35% above last year.

Kinds on Feed—In the 26 states, 70% of the cattle and calves on feed April 1 were steers and steer calves, 29% were heifers and heifer calves and 1% were cows and other. This is the same percentage breakdown as Jan. 1, 1961 and April 1, 1961, says the USDA.

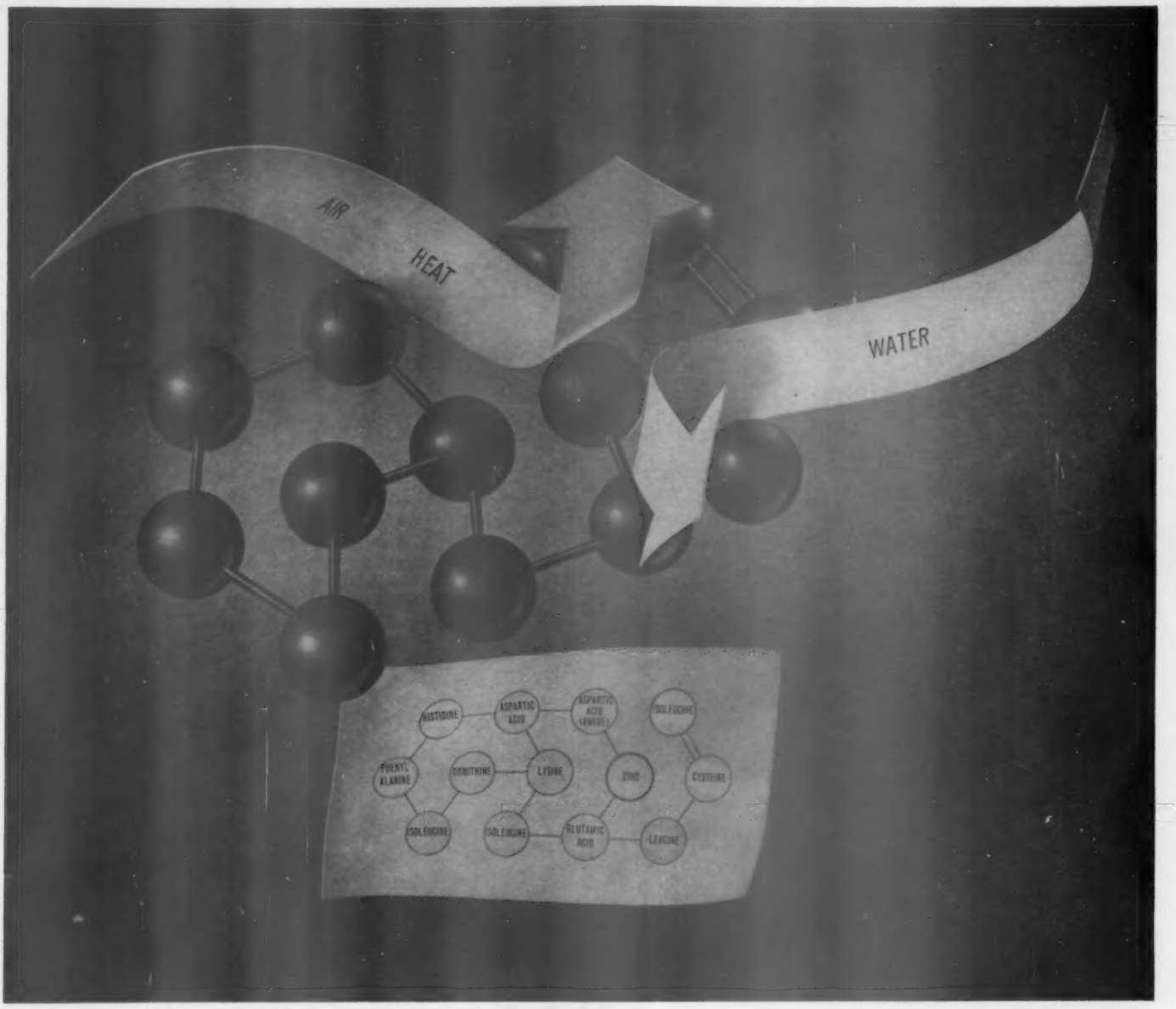
Time on Feed—In the 26 states, cattle and calves on feed by length of time as a per cent of total on April 1 this year and last were: Under three months, 37 and 39%; three to six months, 56 and 55%, and over six months, 7 and 6%.

The number on feed under three months at 2,606,000 head was 1% below last year. The 3-6 month group at 3,939,000 head was up 8%, and the over six month group at 470,000 head was 15% above a year earlier.

Marketing Intentions—Cattle feeders in the 26 states intend to market 48%, or 3,336,000 head of the April 1 inventory number during April, May and June, says the USDA.

If intentions are carried out, the marketings would be 7% above the 3,105,000 head marketed the second quarter of 1960 from the April 1 inventory.

A breakdown by months of total anticipated marketings of the April 1 inventory during the quarter shows 38% to be marketed in April, 32% in May and 30% in June. Expected marketings, as published, are based upon the usual relationship between survey data and actual marketings.



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Grain Bill Need Not Up Price Of Broiler Feed, Official Says

By KELVIN ADKINS
Special Correspondent

SALISBURY, MD. — Broiler feed prices need not be higher with the enacting of the feed grain program, Dr. James T. Ralph told some 250 broilermen at the regional poultry meeting held here. Dr. Ralph is assistant secretary for stabilization, U.S. Department of Agriculture.

"While we have raised support prices on grains, it does not necessarily follow that market prices will go up accordingly," he said. "Since the program was announced, in fact, prices have gone down."

Among other topics which were included in the program of the regional poultry meeting were: condemnations, disease control, undeveloped hatchery egg production possibilities on the peninsula, the use of credit as a tool and broiler house research.

On the topic of broiler feed prices, Dr. Ralph added, "Should prices go up to the support levels, we do not believe it would be an increase of proportions you could not live with.

"The increase in the support level on corn from $1.06 to $1.20, for instance, and the comparable increases on other grains, might increase the price of poultry mashes by 7 to 8%. In terms of increased cost per unit, broiler costs would be increased by less than half a cent per pound. Cost of production changes in this amount are not unusual in the poultry industry.

"When we talk about the price of feed grains, we have to remember that our total supply this marketing year is at a record high of 244 million tons. This heavy supply," he said, "plus the prospect of further excess production under the previous legislation, threatened to cut net farm income, which had already fallen from $16 billion in 1951 to $12 billion in 1960.

"We must realize that a continuation of this situation could only mean chaos to agriculture, including you in the broiler industry."

Speaking on the subject, "The New Frontier and the Poultry Industry," Dr. Ralph said the poultry industry is now supplying nearly one fifth of the American consumer's annual meat supply.

Exports are becoming of increasing importance in the poultry industry, he said. Last year exports reached 117 million pounds—about 3% of our national production of poultry meat. This is not a large percentage—but had this amount been thrown on the domestic market instead of being sold overseas, it would have contributed to price problems here, he commented.

Just about five years ago U.S. exports of poultry meat totaled only about 28 million pounds—and most of that was turkey and fowl going to Canada and a few other countries in this hemisphere, he commented. Now U.S. poultry meat exports—a large part of it broiler-fryers—are going literally around the world, he said. Last year U.S. poultry was shipped to 60 different countries. "Western Europe is presently our best market with a big volume going to West Germany, Switzerland and Holland," he added.

CONDEMNATIONS—The number of broilers condemned by federal inspectors in processing plants doubled from 1959 to 1960.

Gene Bailey, Townsend, Inc., Millsboro, Md., said this waste in the industry cost processors in the Delmarva area in excess of $2½ million last year. Mr. Bailey was a speaker on the panel "Up to Date on Condemnations."

He said the processor has to pay for these birds, that is why he is so interested. Most processors in Delmarva reportedly feel that this should be charged back to the grower as they do in other areas.

"You can get action when you step on another person's pocketbook," he said.

Ed Covell, Easton, Md., moderator for the panel and chairman of the Delmarva Poultry Industry, Inc., committee on efficiency-quality production, said that only 8.3% of the condemned birds here on the peninsula are the result of processing.

Mr. Bailey pointed out that the processor is only responsible for bruises, cadavers, contamination and overscalds. The major portion of the birds going into the trash can be diseased birds. Last year Maryland's condemnation was 1.59% and Delaware's rate was 2.47% of the birds processed.

Taking heavy tolls were leucosis, septicemia and toxemia, airsacculitus and inflammatory processes. Poultrymen must look for prevention of disease rather than treatment, Mr. Bailey said. "Drugs are no substitute for sanitation," he commented.

Dr. William C. Krauss, University of Delaware, participated in a survey on poultry condemnations in Delmarva. This was the second survey conducted from Sept. 15 to Dec. 8 (processing dates). Birds were followed from the hatchery to the processing plant. This time of year was selected so data could be collected from birds reared during a season of changeable weather, he said.

"Even in flocks which have all the optimum growing conditions, a disease outbreak may produce a large number of condemnable birds," Dr. Krauss said.

"Good sound management practices appear to be a factor in minimizing the rate of condemnation due to disease. The recommended and standard vaccination program for Newcastle disease and other respiratory diseases do exert an influence on keeping condemnation at a low rate. The inclusion of infectious bronchitis vaccine with the first Newcastle vaccination at 7 to 10 days appears to have produced some beneficial effect.

"Narrow houses produce more flocks with a low rate of condemnation. It appears that weather conditions during the growing period have some effect on the condemnation rate."

He went on to say, "Since most disease outbreaks occur from six to eight weeks of age, it seems reasonable to suggest that special effort be taken toward preventing this situation from occurring. Perhaps preventive treatments and special care regarding stress at this period would help reduce outbreaks at this age."

Dr. Max Hibbard, U.S. Department of Agriculture, who is supervisor of federal poultry inspection in the Delmarva area, explained a survey being conducted. There has been controversy in the industry concerning uniform processing plants, he said. The survey was sponsored by the Delmarva Poultry Industry, Inc. Condemned birds have been collected daily from the plants. Each day a refrigerated truck has been driven 400 miles to pick up the birds. The condemned birds have been inspected the second time at the Georgetown substation. This survey will continue until June, he said.

DISEASE CONTROL—There is much that can be done in Delmarva's broiler industry to reduce the disease

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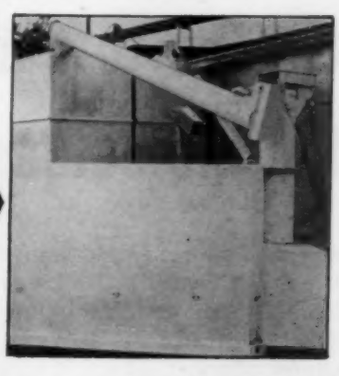

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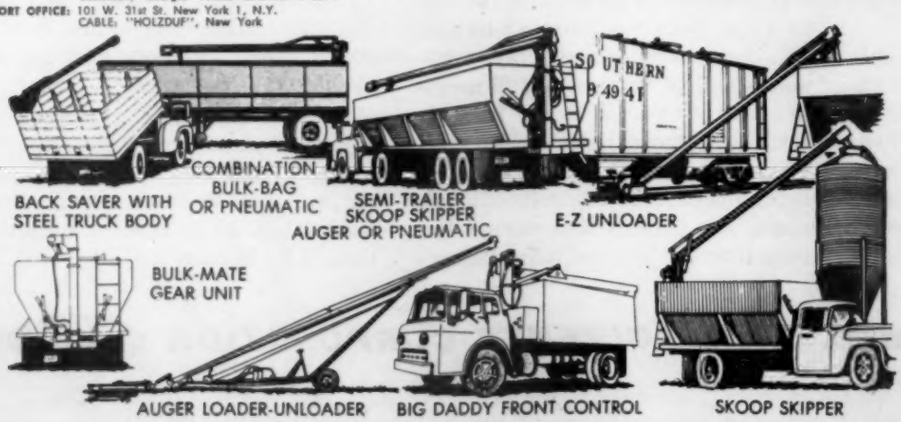

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problem, a panel at the meeting decided.

The panel consisted of Dr. Gordon M. Cairns, dean of agriculture at the University of Maryland; Dr. A. T. Ringrose, poultry specialist at Virginia Polytechnic Institute, and Willis Hudson, Berlin Milling Co., made some suggestions for measures which should be taken.

If Maryland broiler growers want to seek regulations concerning disease control, Dr. Cairns said, it will do little if any good unless Delaware and Virginia have similar regulations since birds produced in Maryland or Virginia may very likely be processing in Delaware or vice versa. All states must have the same laws, he said.

"Some say we live with disease," said Dr. Ringrose. "This should be revised. There are times when we can't live with disease.

"Diseases are transferred from building to building, farm to farm. But diseases do not travel great distances by air, as we have thought. Visitors, servicemen, feed trucks, rats, mice, sparrows and starlings carry diseases from flock to flock."

Dr. Ringrose recommends that servicemen use boots that can be washed and cleaned with disinfectant before going into a broiler house. Fin-type heating pipes should be thoroughly cleaned between flocks. Manure caked between the fins can carry diseases from one flock to the next, he said.

"Good management across the board can do the job," he said. Getting a sufficient supply of litter is a problem in Delmarva. Mr. Hudson said his firm has been using peanut hulls with much success. Some growers try to get by using old litter for the second flock. "I don't believe old litter will work in our area," he said.

PLACE OF OPPORTUNITY—W. T. McAllister, farm economist at the University of Delaware, described Delmarva as a place of so many opportunities that the people only do what they want to do.

Hatchery egg production has tremendous possibilities but has never been developed here on the peninsula, he said. Only about 50% of the hatching eggs used in the industry here are produced on local farms.

"If we produced our own eggs in Delmarva it would be a gross saving of $1.5 million," the economist said. "At least 1½ million hens would be needed to produce the eggs. They would eat 100,000 tons of feed. With a feed margin of $10 per ton, it would mean $1 million to the feed industry.

"The freight, breakage and service charges on shipping eggs into Delmarva cost 4½¢ per dozen eggs. This amounts to half a million dollars a year. If the feed saving and shipping expense are added, it could be a gross saving of 12.5¢ per dozen eggs.

"There are people who need these new sources of income. And past experience has shown that local farmers can produce just as good quality as any other area.

"It is up to the hatcherymen to make it worthwhile for our growers," he said.

"Hatcheries must provide interest, capital, good supervision, and a fair contract.

"Our contracts in the past have been unfair. They have not encouraged production. As competition becomes keener we are going to have to do things we don't want to do. This could be producing our own hatching eggs."

CREDIT—The grower thinks of the broiler house and the equipment in the house as tools for making a living. Credit is another of the broiler grower's tools, said Willis Hancock, Snow Hill, agricultural representative for the County Trust Co. of Maryland.

There are four sources where a broiler grower can borrow money, he said. "They are the bank, the Federal Land Bank, Production Credit Assn. and the Farmers Home Administration.

"Banks offer more flexible loans, which cover many types of expansion under many conditions. However, banks are generally interested in short loans of a few years.

"The Federal Land Bank and Production Credit, at the present time, charge 6% interest. This is not government money or government guaranteed. They are a farmer owned cooperative and make only farm loans.

"The Federal Land Bank will make loans for 10 to 30 years. This is ideal for chicken house construction because banks do not want to exceed five or 10-year loans.

"The Farmers Home Administration makes only agricultural loans. Loans are made to those who can not qualify for loans at other sources.

"Proper financing is more important than the source," he said.

"For many broiler growers it may be more profitable to expand quality-wise than to increase in numbers."

He offered this advice: When you go to a bank or other credit source, take along a good set of records. Show the banker by records what kind of a manager you are. And don't try to keep financial secrets from your banker.

BROILER HOUSE RESEARCH—Some new ideas are coming out of recent broiler house construction research, those attending the meeting were told.

E. N. Scarborough, University of Delaware, said that no one has proved yet that disease is tied to ventilation. Windowless houses have proved to be just as successful as solar houses for laying hens, he commented.

Mr. Scarborough said that studies have shown that growers worry more about ammonia in houses than the birds do. "Birds show little or no effects of ammonia when growers start complaining," he said.

"It has been found that as the amount of light decreases average weight of birds and feed conversion improve. The engineer said that judging from this, just enough light in the broiler house to keep the grower from stumbling over equipment is sufficient.

"During extremely high temperatures, birds seem to thrive if the house gets hot during the day, just so long as the doors and windows are kept open so it will cool off during the night."

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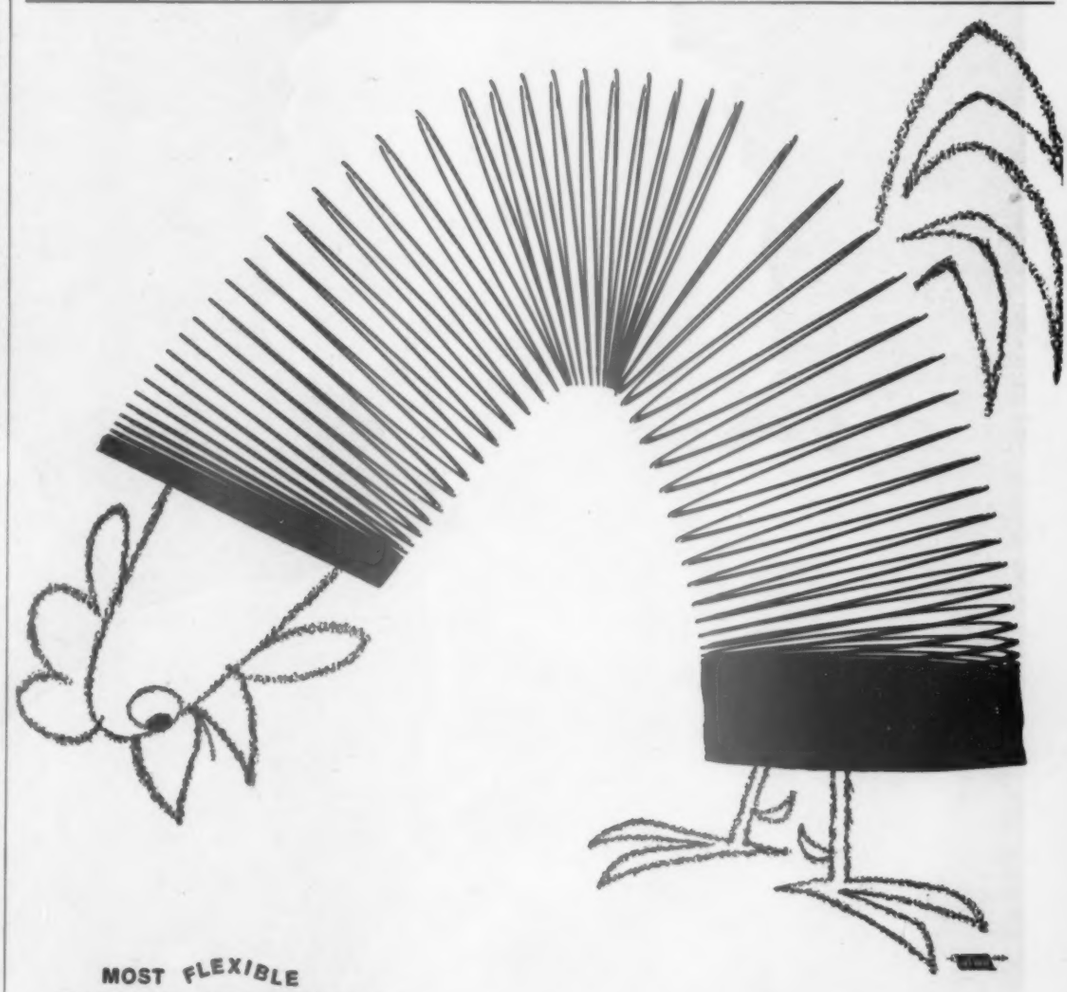

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Great Lakes Chemical Names M. M. Manns

LOS ANGELES — Marshall M. Manns has joined the Great Lakes Chemical Corp. here as manager of agricultural chemical sales. His duties will cover not only the sales of Great Lakes agricultural chemicals, but also technical service to the firm's customers.

In addition, Mr. Manns will be responsible for sales of technical chemicals to be used in agricultural formulations. During the 23 years prior to joining Great Lakes, Mr. Manns has had experience in the application and sale of agricultural chemicals.

In recent years, his sales activity has been focused on the various uses of methyl bromide as well as methyl bromide-ethylene dibromide mixtures for control of insects in stored grain.

"His extensive agricultural background, particularly in grain fumigation, will implement the expanded sales and production program now being undertaken by the Great Lakes Chemical Corp.," said Charles S. Hales, company president.

Mr. Manns will be stationed at the Great Lakes Chemical Corp. office which has been opened in Kansas City.

AG EXHIBITION—Dr. Jake L. Krider of Ft. Wayne, Ind., right, Central Soya vice president, currently on loan to the Soybean Council of America, is shown at the International Agricultural Exhibition in Cairo, Egypt. With Dr. Krider are, from left, Zaki Makawi, Doweina, Upper Egypt; Andre Tawa, U.A.R. Soybean Council representative, and Howard L. Roach, president of the Soybean Council of America. Scientific feeding, breeding and management of layers for producing quality eggs were demonstrated in the exhibition's U.S.A. pavilion. The layers shown were started, grown and fed through egg production on Master Mix Feeds contributed by Central Soya.

Labor Relations Topic For Northwest Meeting

MINNEAPOLIS — John P. Baird, manager, labor relations and production personnel, Ralston Purina Co., St. Louis, will address the Northwest Feed Manufacturers Assn. membership at its May 1 evening meeting in the Calhoun Beach Hotel, Minneapolis.

Jack Conlee, Osborne-McMillan Elevator Co., program chairman, announced that Mr. Baird's subject will be "Industrial Relations—Past, Present and Future."

The May 1 meeting will have special significance in that it has been designated as "Past Presidents' Night."

Appointed Secretary

MILWAUKEE—Gerald Joosse, office manager of Holt Products Co., has been appointed secretary of the company. Mr. Joosse, formerly manager of Waubeka Mill, Waubeka, Wis., started with Holt as a salesman and was brought into the office two years ago. He is a native of Holland and has been in this country since 1950.

Holt Products manufactures a series of vitamin, antibiotic and trace mineral premixes and also serves as wholesale distributor of feed supplements and animal health products.

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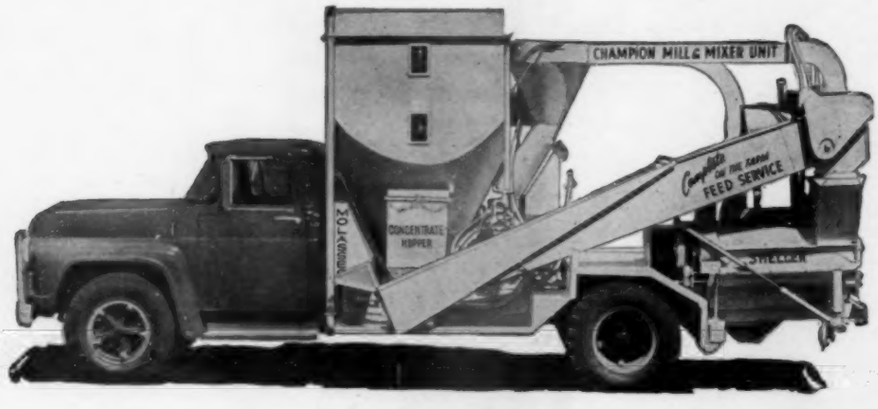

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Chairman for NBC Research Announced

RICHMOND, VA. — The National Broiler Council has announced that Dr. L. A. Wilhelm has accepted the chairmanship of the new NBC market research committee.

Dr. L. A. Wilhelm

Dr. Wilhelm, who is director of poultry development and market research for Quaker Oats Co., has been active in the poultry industry for 27 years, the announcement said. NBC said that the committee will serve the broiler industry in a much needed capacity. It will review "current and programmed market research projects of public and private research organizations and, from this information, draft recommendations regarding needed areas of research."

"We are securing the best talent available to serve on this committee," said Dr. Wilhelm. "They are men who know full well the need for greater efforts to be made in obtaining and maintaining a constant, clearcut picture of the markets and consumers of our product."

Frank Frazier, NBC executive vice president, noted that this committee and Dr. Wilhelm's acceptance of the chairmanship are further "progressive indications of the new NBC's program for expanding the demand for broilers in every market."

Feed Firm Elevator, Warehouse Burned

TOPPENISH, WASH. — A recent fire destroyed the Asbury Feed & Grain Co. warehouse and elevator, one of this community's oldest landmarks. Witnesses said an unidentified person was seen running from the building just before the fire was discovered.

The building, 100 by 120 ft., was bought from the Asbury estate Feb. 9 by Lee Gomez, who operates the Gomez Hauling Co. He estimated the damage at about $35,000.

TEXAS EGG PROMOTION—Details of a planned "Golden Goodness of Texas High Quality Eggs" campaign are being checked by members of the Texas Egg Council and Jack James, standing, Feed Products Division marketing executive, Hess & Clark, Ashland, Ohio. The officers are, left to right: F. Z. Beanblossom, executive vice president, College Station, Texas; Charles Isenhower, president, Clifton, Texas, and T. A. Hensarling, executive secretary-treasurer, Stephenville, Texas. The month-long campaign to promote Texas eggs will take place in July following kickoff luncheons in Houston and Dallas June 28 and June 30, the committee said.

Texas Egg Council Plans Month-Long Promotion for Eggs

CLIFTON, TEXAS—It will be the "Eggs of Texas" rather than the "Eyes of Texas" that will be in the spotlight during July.

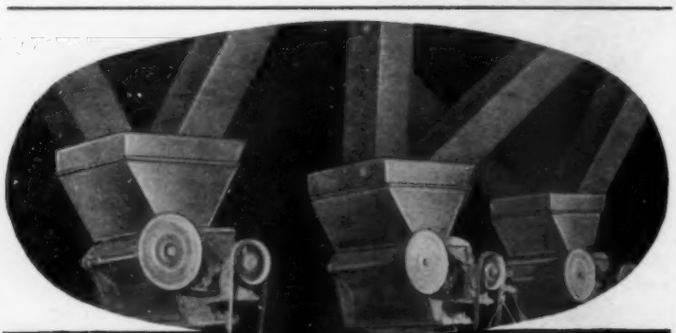
The reason: Texas' poultry and egg industry is planning a month-long "Golden Goodness of Texas High Quality Eggs" campaign, according to Charles Isenhower, Clifton, president of the Texas Egg Council. He says that all facets of the egg industry in the Lone Star state will be involved in the campaign.

With picnicking and salad time at hand, the council says it will promote properly hard cooked eggs for summertime menus. The council emphasizes the difference between "hard cooked" and "hard boiled" and is even giving out instructions for properly hard cooking eggs.

The council is sponsoring the event in cooperation with Hess & Clark, Ashland, Ohio, maker of nitrofurans and other feed medications, and the Morton Salt Co.

Heading the list of activities will be kickoff luncheons in Houston June 28 and in Dallas June 30. Those attending will be producers, feed manufacturers, hatcherymen, extension service personnel including farm and home advisors, newspaper farm editors, Texas Department of Agriculture officials and retail and chain grocery executives. Gov. Price Daniels is to issue an official proclamation opening the month-long drive. Commissioner of Agriculture John White will address the groups attending, according to the plans.

Other parts of the promotion include: Billboard space in major cities purchased by Hess & Clark, posters for grocery stores and point-of-sale promotion pieces provided by Morton Salt Co., posters for feed and egg company trucks, placemats for hotels and restaurants furnished by the Texas Egg Council members and distribution of thousands of hard-cooked eggs, salt and pepper dispensers and recipes, furnished by the Poultry & Egg National Board, just prior to kickoff luncheons.



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Despite the almost annual introduction of new coccidiostats...

nfz® and *bifuran* still come closest to what you and your customers look for in a coccidiostat for replacement birds!

During the last few years — amid a lot of fanfare and promises — several new coccidiostats have been introduced to the feed industry.

While some have started off well, they have failed to live up to their advance billing. Not one has solved the coccidiosis problem.

Unfortunately, there is *still* no such thing as a perfect coccidiostat. We don't have one . . . and neither does anyone else.

But here's a point worth noting: While many heralded coccidiostats have come and faded away, *nfz* and *bifuran* have continued in demand for replacement birds. In fact, use of these two products in replacement feeds is growing.

No registration headaches — One reason behind the increasing demand for *nfz* and *bifuran* is the fact that you can use either of these coccidiostats *without registration problems.* They are not new drugs and are cleared for use in combination with almost all commonly used additives.

But a more basic reason is found in a recent survey in which feed manufacturers were asked, "What do you look for primarily in evaluating a coccidiostat for replacement birds?" The survey shows *nfz and bifuran come closest to providing the benefits wanted.*

Considered by far the most important feature of a coccidiostat for replacement birds is the building of "lifetime immunity" . . . followed by the "safety" of the drug. *nfz* and *bifuran* deliver both of these major benefits . . . plus many additional features that distinguish them from other coccidiostats. Following is the complete *nfz* and *bifuran* protective package:

Lifetime immunity to coccidiosis by housing time... that's a "must" for replacement birds. Both *nfz* and *bifuran* allow lasting immunity development, the natural way—by permitting a mild, controlled infection during the growing period.

Safe, nontoxic — Neither *nfz* nor *bifuran* has harmful effects on internal egg quality, shell texture, hatchability or fertility. Unlike most other commonly used coccidiostats, *nfz* and *bifuran* can be safely fed to laying hens. Also, these two medications are nontoxic to livestock and pets.

Control outbreaks — You can raise the *nfz* or *bifuran* intake to the coccidiosis treatment level...safely... without bringing in another drug. This is not possible with some coccidiostats.

Antibacterial — In addition to aiding in the lifetime immunity process, *nfz* and *bifuran* knock out many secondary infections that can sap vitality, cause nonproductive runts and culls. They give you more than just coccidiosis protection.

Effective against pullorum — By increasing the *nfz* or *bifuran* level to 3 lbs. per ton of feed for 10 to 14 days, you can prevent mortality from pullorum. There's no need to come in with other drugs.

In the light of current registration headaches and confusion about coccidiostats, we wanted to remind you that perhaps *nfz* and *bifuran* can help solve problems for you. They are still doing the same effective job of controlling coccidiosis and allowing immunity they've always done.

For an *nfz-bifuran* reviewing session, get in touch with your Hess & Clark representative.

Effective against necro in pigs

While you have nfz or bifuran in your mill, here's another use for the same medication. nfz (at a level of 10 lbs. per ton of feed) and bifuran (at an 8-lb level) are effective, low-cost treatments for infectious necrotic enteritis in pigs. Self-fed to the entire herd for 5 to 7 days, these drugs prevent disease damage and allow the pigs to overcome the disease drag of necro.

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HOG RANCH PILOT PLANT—This is an exterior view of facilities at the K-R Iowa Hog Producers, Inc., Red Oak, Iowa. It is said that, when completed, this operation will be the only totally integrated "hog ranch." Photo shows farrowing house at extreme right. Feed bins are spaced wider to serve double-decked "Tender-Care" units. Weaning house is shown in center of photo, with two growing houses visible at left. A. O. Smith Harvestore (rising center) stores 13,000 bu. of high-moisture corn which is automatically mixed with a protein supplement and fed on experimental basis to pigs in growing house (hidden behind weaning houses). Feed operations work off conveyor systems.

Operations of Integrated Hog Enterprise in Iowa Outlined

By TOM MOORE
Special Correspondent

RED OAK, IOWA—Operations of the "only totally integrated hog ranch" located here were outlined at a dinner attended by nearly 400 newsmen, farmers, feeders, businessmen and curious townspeople.

Host at the banquet to introduce the community's newest enterprise, the K-R Iowa Hog Producers, Inc., was the Red Oak Chamber of Commerce.

Focal point of interest was the K-R pilot plant, which features air conditioning for the animals and complete mechanization of feeding, watering and manure removal, plus immunization from disease.

"People from all over have come to look at it. The widespread interest is amazing," said Bert Render of Omaha, a partner in what is expected to be a multi-million-dollar operation within five years. He is vice president of K-R and president and general manager of Mid-American Milling Co. of Omaha.

Lowell Kinnison of Red Oak is president of K-R and vice president of Mid-American.

K-R's $250,000 pilot plant is located on a 2½ acre tract southwest of town.

Today it is a cluster of five all-steel buildings, capable of handling up to 500 marketable pigs each month or 6,000 in 12 months.

By 1965, plans call for production to peak at 100,000 hogs annually in a greatly expanded operation modeled after the pilot plant, but numbering more than 60 buildings spread over the remaining 210 acres.

Feed Mill Facilities

The completed "ranch" will also include a feed mill for manufacturing of a complete pelleted feed, and a slaughterhouse for preparing carcasses for shipment to the West Coast.

By then, too, the firm expects to employ about 200 persons. Most would work in the packing plant. The others would include two veterinarians and 20 herdsmen to look after hog-raising facilities, plus 80 drivers to truck the firm's products west.

Construction of the feed mill, with a manufacturing capacity of 10 tons of feed per hour, is to begin this summer. Work on the packing plant begins in summer, 1962, according to Mr. Render.

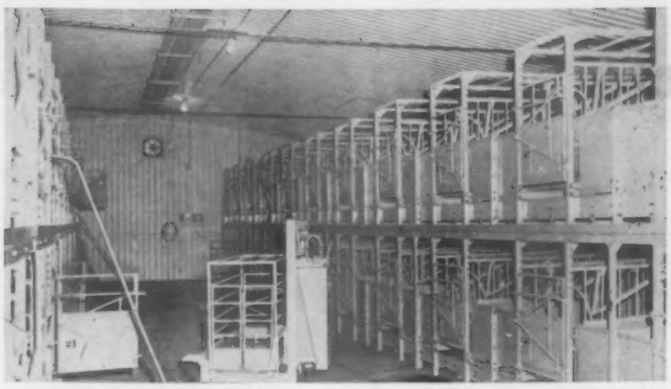
The completed hog-raising units, five buildings to the unit, will be ready by 1964, he said. There will be 10 of these, totaling 50 buildings, each costing in the neighborhood of $200,000. Construction of the first two units is to begin this fall.

The pilot buildings consist of a farrowing house—equipped for 48 sows—and a weaning and growing house with a capacity for 500 pigs, and three finishing houses.

In the first weeks of operation, Mr. Render said, farrowing has averaged 10 pigs per litter against a national average of 7½ pigs. The operations started with 12 gilts.

At present, only two persons, the veterinarian and herdsman, are al-

FARROWING UNITS—These facilities, located at the K-R Iowa Hog Producers, Inc., Red Oak, Iowa, show sow which will farrow soon, producing litter like that in adjoining Tender-Care unit at left. Special gate in each unit can be lowered to separate the sow from litter, which lives in quarters resembling a drawer. Drawer can be extracted and litter inspected without disturbing the sow. Grate visible beneath litter allows manure to be carried away by conveyor.



FARROWING HOUSE INTERIOR—Twenty-four double-decker units pictured here will house 48 sows in facilities at the K-R Iowa Hog Producers, Inc., Red Oak, Iowa. Each unit is served by a pipe carrying cooled air. Pipes as well as manure removal, waterer and feeder are located at the rear of these rows (picture was taken from center aisle). Note empty sow cart. Sow is placed in crate on the cart after she enters the building. Cart is wheeled to proper unit and, if necessary, crate is raised to upper deck by hydraulic lift on cart. Gates on unit and crate slide to allow easy passage by sow.

lowed inside the pilot plant. This step was taken as part of K-R's strict program of disease control.

The buildings are of steel, with insulated ceilings and walls and concrete floors. No wood was used in the construction.

Sows are scrubbed with disinfectant before entering the farrowing house several days before farrowing time.

Interior of the farrowing house has two rows of double-deck pens, 12 to the row, with an aisle between rows.

The pens were purchased from the A. O. Smith Co., and are called "Tender-Care" units. They cost $400 each, Mr. Render said. Each is equipped with a heat lamp for the piglets after farrowing.

The farrowing house is equipped with a refrigeration unit and cooled air is piped to each pen. During summer, the temperature can be maintained at from 55 to 60 degrees, said Mr. Render.

The larger farrowing houses to be constructed will handle 100 sows each.

After farrowing, the sows are removed and the farrowing house is steam cleaned in preparation for the next batch of occupants.

According to Mr. Render, the pigs will be weaned at three weeks and placed in the weaning and growing house. There they will remain for from four to five weeks. This building in the pilot project can handle 500 pigs, 20 to the pen. Radiant heating is built into the floor of the sleeping area of this building and in the

FROM HERE TO MARKET—This is one of three growing houses for pigs at K-R Iowa Hog Producers, Inc., Red Oak, Iowa. Note abundance of metal. No wood was used anywhere in any of these buildings. Automatic feeder extends through center, dividing the pens. Partly visible at extreme right is automatic waterer. Floor is sloped away from feeder on either side to carry manure and urine to removal conveyors at far left and right (neither visible).

WEANING HOUSE—Twenty pens located in weaning house of K-R Iowa Hog Producers, Inc., Red Oak, Iowa, each has a 25-pig capacity. Photo shows automatic feeder at far left. Note pipe covering auger extending through pen divider. Grate at center covers manure conveyor. Motor for this is partly visible mounted at left. Litter is lying on "sleeping area," which is concrete floor with electric heating imbedded. Partitioned box between conveyors (rear) is automatic waterer.

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FEED INGREDIENTS PANEL—Pictured here are members of the first Feed Ingredients Sales Agents' Advisory Panel which met recently at the invitation of International Minerals & Chemical Corp. in Skokie, Ill., to discuss feed industry trends and business outlook. The panel will be an annual event. Left to right, seated: Bradley Barr, Kansas City; B. A. Lucius, Ft. Worth, Texas; Norman D. Hogg, Toronto; and Robert E. Gray, Sunset Feed & Grain Co., Buffalo, N.Y. Left to right, standing: W. P. Mann, Omaha; Walter C. Hanson, James Farrell & Co., Seattle, Wash.; R. C. Grandone, Norwood, Mass.; John F. Young, Cincinnati, Ohio; R. A. Blomfield, Blomfield-Swanson, Minneapolis; James B. Crew, Edward T. Smith Co., Atlanta, Ga.; and Ralph E. Getkin, Getkin-Moyer, Inc., Norristown, Pa.

floors of the finishing house sleeping areas.

Auger Feeding, Cleaning

Two 6 ton bulk feed bins are attached to the outside of the farrowing and weaning houses, one for each row of pens. Feed is carried into the building via augers, the same method used to remove manure. The augers are activated by a time clock.

The final complex of buildings in the pilot plant are three finishing houses. They are similar in size and construction to the other buildings and also feature automatic feeding and manure removal via augers laid through the center of the building for feeding at both sides simultaneously. Eight pens in each finishing house will hold 60 hogs each. The larger finishing houses each will have 16 pens. One feed bin is located outside each finishing house.

Mr. Render said that feed will be a special mixture to compensate for the fact that the pigs are confined and are on concrete floors. The firm hopes to achieve a feed-to-gain ratio of 2½ lb. to 1 lb.

The plant will offer a number of benefits to area farmers, persons attending the dinner were told.

Purchase Local Corn

Most of the surplus corn within a 100 mile radius of Red Oak will be purchased for the ranch as production nears its peak. This is expected to amount to 1 million bushels annually.

Plans are also being made to lease herd boars used at the ranch to private farmers desiring to upgrade their herds. K-R would receive one piglet from each litter in payment.

Honeggers' Ships Trainload of Feed

FAIRBURY, ILL.—A special 21-car train completely filled with Honegger "Milk Popper" dairy concentrate was recently sent on its way to 11 dealers in Wisconsin from the Honeggers' & Co., Inc., feed mill here.

Company officials say that the train carried 400 tons of Milk Popper, or enough to produce 32 million glasses of milk or provide every Wisconsinite with two quarts of milk.

E. F. Dickey, president of Honeggers' & Co., Inc., commented at a pre-ceremony breakfast that several times in the past, complete train loads of feed of one kind or to one destination have been shipped from the Fairbury mill. However, he stated, this is the first time that a complete load of dairy feed has been shipped. "This trainload of Milk Popper," Mr. Dickey said, "is symbolic of the efforts of this group of dealers to serve the dairymen in their area, and further their contribution in advanced dairy management and feeding."

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Unfortunately, some mill owners have found to their regret that the low bids they accepted from some contractors were low only because they were incomplete. The addition of such vital things as complete wiring and ductwork, motor starters, air cylinders, and countless other "minor" items sky-rocketed their costs after it was too late to do anything about them.

You wouldn't think of buying a new car without a starter, spark plugs, generator, or other similar equipment. But people actually do buy mills under much the same conditions, only to find out that they must come up with extra money before the mill will even run.

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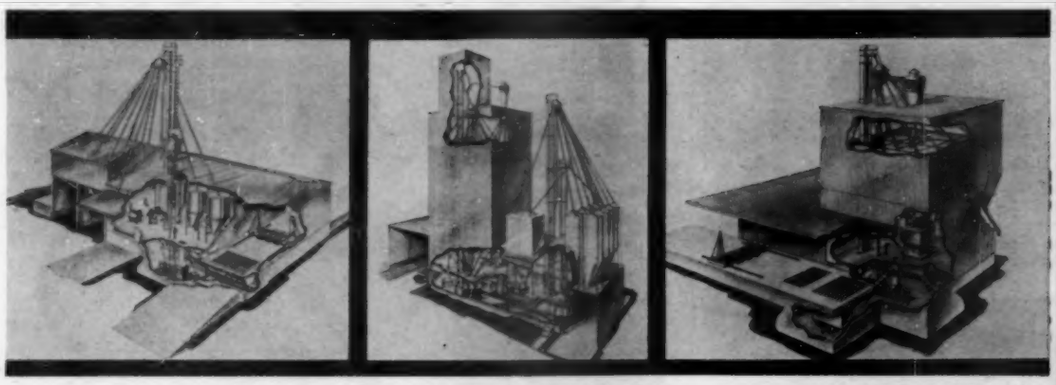

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Patents Issued by U.S. Patent Office

2,974,043

Poultry Feed

Patent issued to Melvin Hochberg, Charles M. Ely and Howard C. Klein, assignors to Nopco Chemical Co., Harrison, N.J., a corporation of New Jersey.

An animal feed comprising a feed ration having incorporated therein zinc nicotinate in growth promoting quantities.

2,973,265

Animal Feed Supplement

Patent issued to Marvin B. Gillis, assignor to International Minerals & Chemical Corp., a corporation of New York.

A method of preparing a calcium phosphate-containing livestock and poultry feed supplement which comprises the steps of reacting an aqueous phosphoric acid solution with compounds of cobalt, copper, iron, manganese and zinc, said acid containing less than about one part of fluorine per 100 parts of phosphorus, said cobalt compound being added in an amount to provide between about 10 and about 1,000 parts of cobalt, said copper compound being added in an amount to provide between about 1,000 and about 15,000 parts of copper, said iron compound being added in an amount to provide between about 1,000 and about 50,000 parts of iron, said manganese compound being added in an amount to provide between 500 and about 30,000 parts of manganese, and said zinc compound being added in an amount to provide between about 1,000 and about 50,000 parts of zinc per million parts of phosphorus in said phosphoric acid solution, reacting a calcium compound with the free phosphoric acid remaining in solution after reaction with the compounds of cobalt, copper, iron, manganese and zinc, whereby a slurry is formed by the precipitation of a solid calcium orthophosphate material, said material having compounds of cobalt, copper, iron, manganese and zinc distributed throughout the solid, and recovering said solid orthophosphate material.

2,973,299

Treating Infectious Synovitis With Brilliant Green

Patent issued to John M. Coffin, c/o State Board of Agriculture, Seaford, Del.

A process for treating infectious synovitis in poultry which comprises feeding the same a composition containing from .002% to .02% by weight of brilliant green as the sole active ingredient.

2,973,266

Stabilization of Fat-Soluble Vitamin

Patent issued to Adolf Rosenberg, Forest Hills, N.Y. (57 Commerce St., Brooklyn 31, N.Y.).

Process of making dry, discrete beads containing stabilized fat-soluble vitamin in a fatty core which is encased in an irreversibly heat-denatured, water-resistant proteinaceous digestible shell, said process comprising mixing a solution of fat-soluble vitamin in a fat having a melting point of about at least 34° C., at a temperature of about 10° C. above the melting point of the fat with an aqueous solution of a heat coagulable, proteinaceous material, heating the mixture to effect incipient denaturation of the protein, the time-temperature relationship for effecting incipient denaturation being determined by heating specimens of said mixture under correlated temperatures and time intervals which show the correlation of time-temperature at which the mixture changes from a flowable mass to a nonflowable mass, homogenizing said mixture to form an emulsion with the oil as the finely dispersed internal phase, and spray drying said heated emulsion to irreversibly denature the protein.

2,971,843

Method of Making an Animal Feed

Patent issued to Robert Alexander Spencer Templeton, Cereal House, 58 Mark Lane, London E.C. 3, England.

The method of making a foodstuff which comprises soaking a mixture of food ingredients including ingredients containing starches and proteins in an amount of water which is at least 50% of the combined-weight of the food ingredients and water at a temperature below that at which substantial gelatinization of starches and substantial conversion of proteins takes place for at least about 30 minutes to cause water-soluble substances to be dissolved out of the various ingredients and to become admixed with one another in the resulting solution and to form a porridge-like mass, and thereafter drying the resulting porridge-like mass to form a dry product.

2,971,885

Animal Feeds

Patent issued to Herbert G. Luther, Warren M. Reynolds and William C. Sherman, assignors to Chas. Pfizer & Co., Inc., Brooklyn, N.Y., a corporation of Delaware.

A composition which comprises a nutritive animal feed together with a growth stimulating amount of N-p-chlorobenzhydryl-N'-hydroxyethoxyethylpiperazine.

2,968,592

Polyvinylpyrrolidone Penicillin Treatment of Bovine Mastitis

Patent issued to Clifton Robert Curtis, assignor to Hamilton Pharmacol Co., Inc., Hamilton, N.Y.

The treatment of bovine mastitis and udder infection which comprises periodic intramammary injection of dosages comprising a vehicle containing penicillin and polyvinylpyrrolidone.

2,968,559

Feed Product and Method of Producing Same

Patent issued to Benjamin H. Thurman, assignor to Benjamin Clayton, doing business as Refining, Inc.

A process for producing an animal feed product, which process includes the steps of: mixing with a glyceride oil containing free fatty acids and gums an amount of soda ash sufficient to precipitate said gums and to react with at least some of said free fatty acids to form soap, said amount of soda ash being no more than about three times that theoretically required to neutralize said fatty acids; separating from the mixture a soapstock containing said soap and said gums, said soapstock being substantially completely soluble in petroleum ether; and mixing a minor portion of said soapstock with a major portion of a glyceride oil meal.

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WOodburn 1-3677

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427 Hanna Building
SUperior 1-3830

DETROIT 23, MICH.
18230 Grand River Ave.
BRoadway 3-7090

HOUSTON 5, TEXAS
Texas Gas Building,
2472 Bolsover St.
JAckson 6-2551

LOS ANGELES 22, CALIF.
6670 E. Flotilla St.
RAymond 3-2492

NEW YORK 22, NEW YORK
445 Park Ave., PLaza 9-8200

ST. LOUIS 66, MO.
800 North Lindbergh Blvd.
WYdown 3-1000

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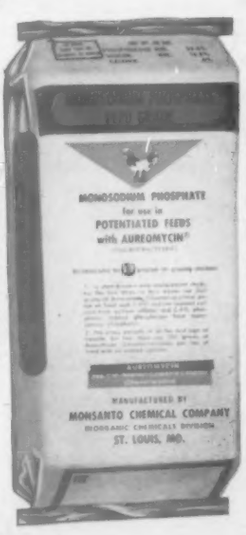
MONSANTO CHEMICAL COMPANY
INORGANIC CHEMICALS DIVISION, ST. LOUIS 66, MISSOURI

THE RECOMMENDED PHOSPHORUS SOURCE FOR AUREOMYCIN-® POTENTIATED POULTRY FEEDS

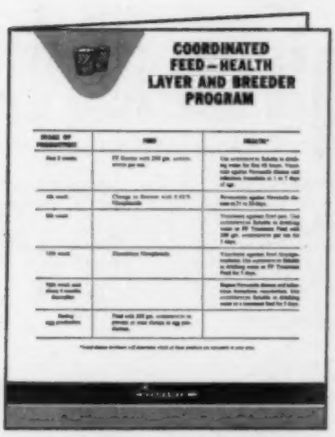


AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.

PF is the company's designation for its special program for formula feed manufacturers.

CYANAMID HELPS YOU SELL MORE POULTRY FEEDS WITH A COORDINATED FEED-HEALTH PROGRAM

Essential part of this program for replacement chicks is a potentiated starter feed containing Aureomycin. Manufacturers, offering such a feed, are providing today's most effective way to boost future egg production.



This folder describes the step-by-step Coordinated Feed-Health Program for Layers and Breeders. It is for distribution to your customers. If you need extra copies, see your Cyanamid representative or write direct to Cyanamid.

Progressive feed manufacturers recognize a powerful, new, volume sales builder in *potentiated* AUREOMYCIN® . . . perhaps the greatest boon to successful poultry raising in the last 10 years.

Already, these manufacturers have seen the remarkable good health results obtained with potentiated broiler feeds. This year, many will see similar results as they evaluate the effects of potentiated starter feeds for replacement pullets.

Benefits of potentiated starter feeds

If you are now offering and selling a potentiated starter feed containing 200 grams of AUREOMYCIN per ton for replacement flocks, here are some of the benefits your producers can expect:

1. Better protection than ever before against CRD, synovitis and blue comb.
2. Better protection than ever before against vaccination reactions.
3. Early and effective prevention of coccidiosis — first time ever offered by an antibiotic.
4. More chicks saved. More vigorous pullets in the laying house, ready for top egg production.

Producers, gaining these benefits, can build more profitable poultry operations. Feed manufacturers, gaining more customer satisfaction, can build repeat volume in poultry feeds.

Recommend complete Feed-Health Program

Your potentiated starter feed is an important step in a Coordinated Feed-Health Program for layers and breeders. Another important step is a *treatment feed* for layers now in production (see step 6). The entire, step-by-step program is described in detail in the egg producer advertisement reproduced on the opposite page.

Cyanamid's Coordinated Feed-Health program is a proved program. Producers will find it sound, practical, easy to follow. Feed manufacturers and dealers who participate in this program will find it a continuous good-will builder . . . and an effective new-business builder. American Cyanamid Company, Agricultural Division, New York 20, N. Y.

®AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.

This month, your prospective customers are reading the advertisement shown here. It appears in leading poultry papers. 4,700,000 impressions to egg producers! These customers will also be listening to well-known Farm Directors tell the benefits of the Coordinated Feed-Health Program for layers and breeders on 40 radio stations throughout the country.

HOW TO TURN MORE REPLACEMENTS INTO PROFITABLE EGG PRODUCERS

Do this: coordinate proper feeding with protective medication through every stage — from baby chicks to laying hens.

You've selected your replacement chicks for bred-in characteristics that should bring you more eggs over a longer period at less cost.

How can you be more certain that these chicks will live up to their potential and make your egg-producing operation an economic success?

By following good management and sanitation practices. By taking every precaution to see that disease is kept out of your flocks all the way through...from chick to laying hen.

Disease, visible or invisible, is the biggest handicap to making more egg money. It can strike suddenly, cause high death losses or severe slumps in production.

The Cyanamid Feed-Health Program—described step-by-step here — shows you *what* to do to lick disease, *when* to do it and *how* to do it. It's a proved program —practical, sound, easy to follow.

Talk to your feed man. Ask him for your free folder which describes, in detail, the Cyanamid Feed-Health Program for layers and breeders. American Cyanamid Company, Agricultural Division, New York 20, N.Y.

**AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.*

The label instructions on Cyanamid products, and on products containing Cyanamid ingredients, are the result of years of research and have been accepted by Federal and/or State Governments. Always read the labels and carefully follow directions for use.

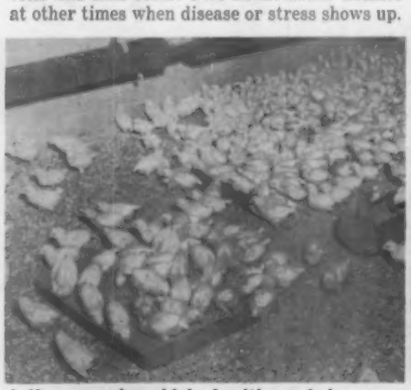
CYANAMID
COORDINATED FEED-HEALTH PROGRAM

CYANAMID SERVES THE MAN WHO MAKES A BUSINESS OF AGRICULTURE

1. Give them health in the drinking water. First immediate step for replacement chicks is AUREOMYCIN® Soluble in the drinking water for first 48 hours. This assures adequate early intake of AUREOMYCIN to guard against CRD, synovitis and blue comb. Give AUREOMYCIN Soluble at other times when disease or stress shows up.

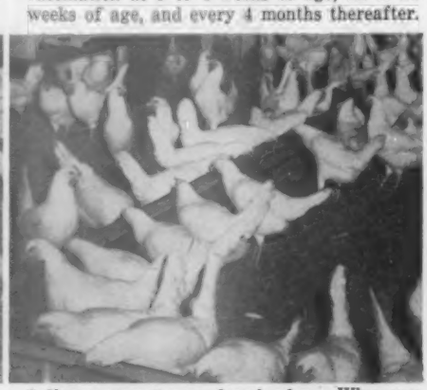
2. Feed potentiated starter feed with Aureomycin. A PF starter containing 200 grams of AUREOMYCIN per ton is today's most effective feed. Fed for 3 to 4 weeks, this starter feed protects against CRD, synovitis, blue comb and coccidiosis — guards against vaccination reactions — gets chicks off to a fast, vigorous start.

3. Dust away Newcastle disease and bronchitis. Here's your sure way to control Newcastle disease and infectious bronchitis simultaneously. Use Cyanamid Dust BIOLATOR®, or AQUAVAC® in the drinking water, at 1 to 7 days of age. Repeat vaccination at 3 to 4 weeks of age, 12 to 16 weeks of age, and every 4 months thereafter.



4. Keep growing chicks healthy and vigorous. At 4 weeks of age, change to grower feed with 0.02% Nitrophenide. Feed up to 12 weeks. Nitrophenide will continue to control coccidiosis and allow the development of immunity. If an outbreak occurs after 12 weeks, treat with SULMET® drinking water solution.

5. Don't risk disease setbacks later. Be prepared with a potentiated treatment feed containing 200 grams of AUREOMYCIN per ton at any time trouble shows up, including coccidiosis outbreaks. AUREOMYCIN is ideal for treatment because it effectively controls CRD, synovitis, blue comb as well as coccidiosis.



6. House more top-performing hens. When you follow this Cyanamid Feed-Health Program, you put more healthy pullets in the laying house. At the first sign of trouble — drop in feed consumption, slump in egg production or other symptoms of disease — use a feed containing AUREOMYCIN. Keep hens producing!

VAN DUSEN HARRINGTON
DIVISION
F. H. Peavey & Co.
GRAIN SOYBEANS FLAX
Founded 1852
MINNEAPOLIS DULUTH

Dehydrated ALFALFA MEAL High Carotene
From the Fertile Red River Valley of Minnesota
Write - Phone - Wire
RED RIVER ALFALFA CO.
Ralph Eickhof Phone ATlantic 1-1455 Crookston, Minn.

Eastern States Gives Feed Bonus Stamps

WEST SPRINGFIELD, MASS. — Eastern States Farmers Exchange is among feed distributors offering bonus stamps.

The program established by the cooperative, serving New England and some of the Mid-Atlantic states, differs somewhat from general trading stamps.

The stamps, worth 25¢ apiece, are given only for "Pacemaker," Eastern States' starter feed. One bonus stamp is given for each five bags of the feed purchased.

The stamps are applied to the purchase of "Choicemaker" or other pullet growing rations.

Each book of stamps holds 20 bonus stamps and is worth $5 when filled. However, the books do not have to be full to be utilized for the growing feeds.

Eugene M. Maurer

W. H. Lohmeyer

Mel Miller & Co. Names Area Managers

KANSAS CITY — Area managers, in charge of feed production and farm-to-market coordination for the Missouri and Kansas programs of Mel Miller & Co., Inc., have been named by Mel Miller, president.

Eugene M. Maurer, stationed at Carrollton, is the area manager for Missouri. William H. Lohmeyer is area manager for Kansas, stationed at Topeka. They will supervise feed production and the various farm-to-market programs in their respective areas. These programs are sponsored by the Agricultural Development Co., a division of Bartlett & Co., but are under the management of the Mel Miller organization. New feed mills will be built at Carrollton and Topeka to supply the feed for the programs.

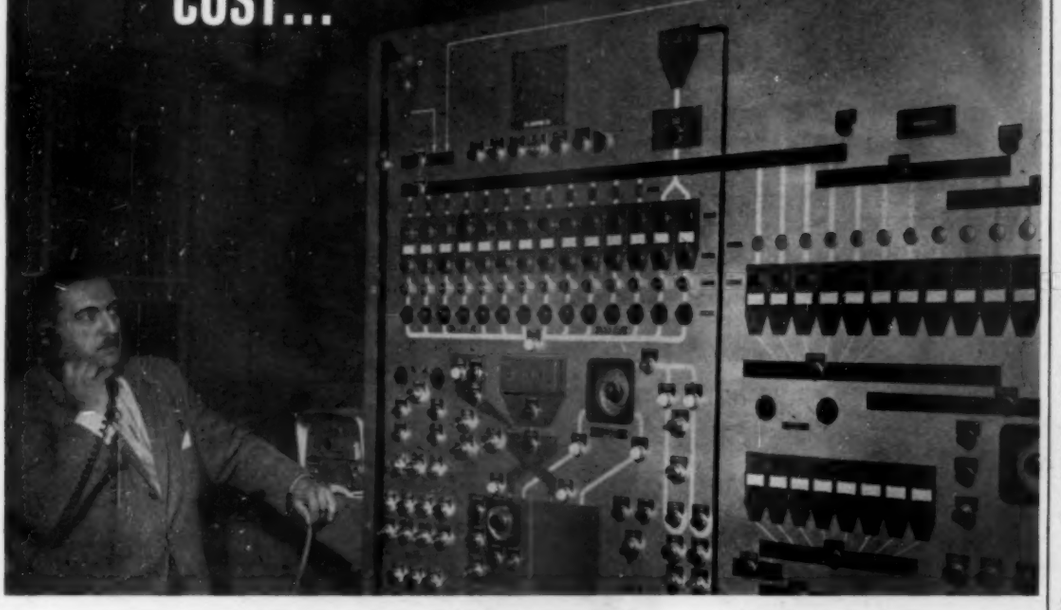
Mr. Maurer joined Mel Miller & Co. recently, coming from the Garden City (Kansas) Co-op. where he was employed nearly two years in production, purchasing, sales and credit work. Upon graduation from Kansas State University's feed technology program in 1958, he worked as swine herdsman for the Staley Milling Co. (now Professional Feeds division of Spencer Kellogg & Sons, Inc.) farm at Liberty, Mo. During his college work, Mr. Maurer was an assistant herdsman at the Garden City Experiment Station and a maintenance engineer for the Feed Technology plant at Kansas State.

Mr. Lohmeyer joined Mel Miller & Co. following his graduation from the University of Missouri in January, 1959. A native of Kansas City, he worked as a chemist for Colgate-Palmolive Co. between service in the armed forces and the completion of his college work. Prior to his appointment as area manager, he worked in quality control, formulation and farm production research for the Miller organization.

WISCONSIN FEED FIRM SOLD

CRIVITZ, WIS. — Charles Jonas, Jr., has purchased the Crivitz Feed Mill from John Haag.

HOW CENTRAL CONNECTICUT CO-OP CUTS OPERATING COST...



WITH RICHARDSON SELECT-O-WEIGH PUNCHED CARD BATCHING

Operating cost down and more savings in sight... production up... and each ton of feed precision-formulated... that's what Richardson Select-O-Weigh is doing for Central Connecticut Co-op. To get the 1300 tons per week output of laying mash, crumbles, and pellets, the operator simply slips the formula—a punched card—into the "reader" and presses the "START" button. Immediately, colored lights on the graphic panel signal the progress of the batching cycle. All ingredients are routed through the mill by the Select-O-Weigh system from storage to scale to mixers, and then to pellet mills and/or holding bins. Interlocks assure error-free operation, including the manual addition of pre-mix.

Why not see how Richardson Select-O-Weigh system can cut *your* operating costs, boost *your* production, and keep customers coming back for *your* precision-formulated feeds. Your nearest Richardson representative will be glad to discuss this with you... or write **Richardson Scale Company, Clifton, N. J.**

Send for free Technical bulletin

Richardson

Sales and service Branches in Principal Cities. Also manufactured in England, France and Australia. Richardson Scales conform to U. S. Weights and Measures H-44 for your protection.

RS-10

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®American Cyanamid Company's trademark for chlortetracycline
and other
Products of Progress
THE FOX COMPANY
Newfield, N. J.

Buy and Sell through WANT ADS —in— FEEDSTUFFS

The man who depends on egg profits for a better living has the right to know . . .

"I can buy chicks for less, why pay more for Hy-Line Birds?"

Answer:

It generally costs more to produce something measurably better. Usually you get what you pay for. And while Hy-Line chicks cost a little more, their extra value is impressively demonstrated when you look at all official Random Sample Tests ending in 1959 and 1960. In averaging these tests, Hy-Line 934-C layers outearned every one of the ten other most widely entered varieties. In the two years, Hy-Line 934-C was tested against these ten other varieties for a total of 187 comparisons. Hy-Line 934-C won 135 comparisons and tied two more. This consistent performance earned Hy-Line layers more than twice as many total first, second and third places as any competitor during the two years. Official tests show Hy-Line chicks return more as layers . . . after paying back the slightly higher chick cost. That's why your feed customers stand a better chance of making bigger profits when you recommend Hy-Line chicks.

Hy-Line® PRECISION GENETICS

Hy-Line Precision Genetics uses inbreeding, hybridizing, and poultry blood-typing to develop Hy-Line layers that are outstanding for production, livability, feed efficiency, and large, good-quality eggs.

Hy-Line® CHICKS

Hy-Line is a registered trademark of Pioneer Hi-Bred Corn Co.
Des Moines, Iowa

F-10R

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"CONVERSION FACTOR"
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Efficiency of Growing Broilers to a Heavier Weight

By Dr. E. L. Wisman
Virginia Polytechnic Institute

Data are given to show that, production-wise, it would be economical to carry broilers beyond the customary nine-week body weight. While certain consumer problems would have to be worked out, it seems the poultry industry could gain in several ways from this type of operation. For instance, feed sales would increase by 20% if broilers were marketed at 11 weeks rather than nine weeks of age in a continual operation and with the same house capacity, and 9% more broiler meat would be produced.

Results given below are based on calculations of data obtained from a broiler experiment (2,762 birds) conducted at Virginia Polytechnic Institute in the summer of 1960. This experiment was conducted as a follow-up to the results of a feeding trial reported to this group last year wherein more returns were indicated from broilers marketed at 10 weeks of age than at earlier ages. The results are as follows:

EDITOR'S NOTE: The accompanying article is from a talk given by Dr. E. L. Wisman at the Virginia Feed and Nutrition Conference. Dr. Wisman is on the staffs of the departments of poultry science and nutrition and biochemistry at Virginia Polytechnic Institute, Blacksburg, Va.

(1) Males reared separately, but not females, grew faster with increased floor space (.8, 1.0, and 1.2 sq. ft./chick) to at least 11 weeks of age. At 13 weeks both sexes were heavier at each increase in floor space.

(2) When intermingled, males grew faster at .8 and 1.0 sq. ft.; fe-

TABLE 1. Experimental Design

Treatment No.	Sq. ft./chick*	No. chicks started per pen†
1	.8	205 males
2	.8	205 females
3	.8	103 males, 102 females
4	1.0	164 males
5	1.0	164 females
6	1.0	82 males, 82 females
7	1.2	137 males
8	1.2	137 females

*Pen space was not available for the desirable rearing of intermingled sexes at 1.2 sq. ft.
†Duplicate pens per treatment, each 164 sq. ft. in size.

TABLE 2. Mean Body Weights (Pounds) by Sex

Sq. ft.	Weeks of age 7	8	9	10	11	12	13
Males reared separately							
.8	2.23*	2.76	3.38	3.91	4.48	4.89	5.34
1.0	2.27	2.79	3.44	3.95	4.52	4.96*	5.37
1.2	2.32	2.83	3.52	4.07	4.62	5.20	5.74
Males reared intermingled							
.8	2.33	2.84	3.48	3.97	4.54	4.98	5.40
1.0	2.30	2.84	3.49	4.06	4.67	5.19	5.67
Females reared separately							
.8	1.93	2.34	2.78	3.18	3.61	3.90	4.12
1.0	1.90	2.32	2.76	3.20	3.60	3.99	4.19
1.2	1.95	2.33	2.80	3.19	3.59	3.98	4.24
Females reared intermingled							
.8	1.91	2.31	2.75	3.14	3.51	3.77	4.03
1.0	1.90	2.31	2.78	3.21	3.53	3.99	4.22

*Air-sac infection observed in one pen.

TABLE 3. Mean Body Weights (Pounds) of Combined Sexes

Sq. ft.	Weeks of age 7	8	9	10	11	12	13
Sexes reared separately							
.8	2.08*	2.55	3.08	3.55	4.05	4.40	4.73
1.0	2.09	2.55	3.10	3.58	4.06	4.48*	4.78
1.2	2.14	2.58	3.16	3.63	4.11	4.59	4.84
Sexes reared intermingled							
.8	2.12	2.58	3.12	3.56	4.03	4.38	4.72
1.0	2.10	2.58	3.14	3.64	4.10	4.59	4.95

*Air-sac infection observed in one pen of males.

TABLE 4. Feed Conversions (Pounds Feed per Pound Body Weight) Of Sexes Reared Separately*

Sq. ft.	Weeks of age 7	8	9	10	11	12	13
Males							
.8	2.13†	2.23	2.31	2.38	2.47	2.63	2.77
1.0	2.11	2.19	2.29	2.38	2.48	2.61†	2.77
1.2	2.14	2.26	2.27	2.36	2.49	2.59	2.71
Females							
.8	2.14	2.24	2.32	2.45	2.54	2.71	2.86
1.0	2.23	2.30	2.38	2.47	2.60	2.72	2.90
1.2	2.19	2.30	2.32	2.45	2.57	2.71	2.84

*Values for each sex not available where sexes were reared intermingled.
†Air-sac infection observed in one pen.

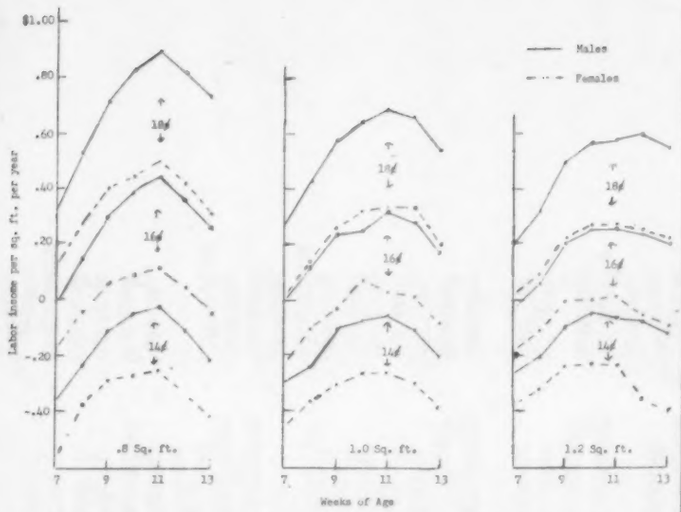

FIGURE 1. Annual labor income from sexes reared separately at selected floor spaces and market prices are shown here.

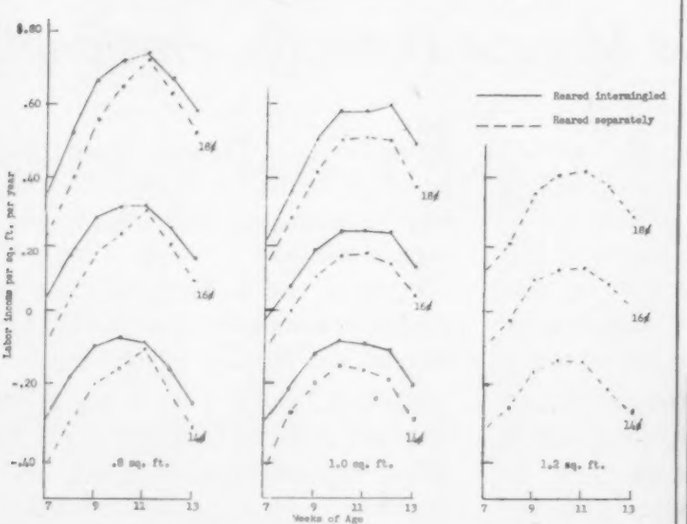

FIGURE 2. Annual labor income from combined sexes at selected floor spaces and market prices are shown.

males grew slower at .8 but not at 1.0 sq. ft.

(3) When the mean of both sexes was considered, intermingling resulted in slightly better growth at 1.0 but not at .8 sq. ft.

(4) Approximately 3% loss in body weight occurred at 9, 11, and 13 weeks of age due to shipping.

(5) Warm eviscerated yield, based on body weight just prior to slaughter, approximated 74% and was not different by treatment, except for a slight increase with age.

(6) Carcass grades determined at 13 weeks by floor space groups indicated a decided upgrading in quality with increased floor space.

(7) A marked increase in breast blisters, which occurred only in males, was observed after nine weeks of age.

(8) The condemnation rate on all birds at 13 weeks was 2.7%, half of which was attributed to air-sac disease. About half of these losses were estimated to have been incurred after nine weeks of age.

(9) Labor income per sq. ft. per year, including condemnation losses but excluding premiums on carcass

(Turn to BROILERS, page 76)

TABLE 5. Mean Feed Conversions (Pounds Feed per Pound Body Weight) Of Combined Sexes

Sq. ft.	Weeks of age 7	8	9	10	11	12	13
			Sexes reared separately				
.8	2.14*	2.24	2.32	2.42	2.51	2.67	2.82
1.0	2.17	2.26	2.34	2.43	2.54	2.67*	2.84
1.2	2.17	2.28	2.30	2.41	2.53	2.65	2.78
			Sexes reared intermingled				
.8	2.09	2.19	2.28	2.39	2.51	2.65	2.79
1.0	2.14	2.24	2.30	2.39	2.51	2.62	2.78

*Air-sac infection observed in one pen of males.

TABLE 6. Percentages of Shipping Shrinkage and Warm Eviscerated Yield

Weeks of age	—% Shipping shrinkage— Males	Females	Average	—% Warm eviscerated yield*— Males	Females	Average
9	3.8	3.6	3.7	73.6	73.2	73.4
11	2.7	3.1	2.9	73.9	73.5	73.7
13	2.6	3.2	2.9	74.3	74.9	74.6
			3.2			73.9

*Based on body weights just prior to slaughter.

ARE YOU A MOISTURE TESTER TESTER??

Some grain men are moisture tester testers without even knowing it. Most often they're the bargain hunters or gimmick fanciers who always seem to end up with untried and unproven equipment. All too often the things that cost them less to buy end up costing them far more to own.

Instead, we hope that you're the kind of moisture tester tester who finds out all you can about the different brands and models available and makes up your own mind about the one that's best for you.

Try 'em all and we think you'll buy the Steinlite 500-RC. It's the best and newest of the Steinlite line that already is more widely used than all other makes of moisture testers combined.

No need to guess at how the 500-RC will perform . . . it's backed by years of research and offers you a full year's factory guarantee. It performs routine testing automatically in seconds, even makes perfect tests of grain right from the dryer or samples of mixed moisture content . . . no need to wait hours for moisture equalization.

No ifs, ands, or buts about it . . . the new Steinlite 500-RC costs you $495 to buy but it pays for you in own one. Write for complete details on this reliable moisture tester and the liberal trade-in allowances being offered for your present equipment.

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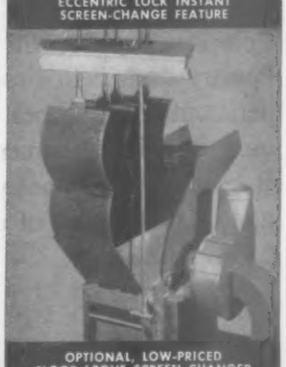

OPTIONAL, LOW-PRICED FLOOR-ABOVE SCREEN CHANGER

heavy duty construction for high tonnage output

- Rugged, welded steel construction.
- Extra-large, extra-high feed opening.
- Powerful six-blade fan assures maximum mill capacity.
- Adjustable, long-lasting, 10-edge hammers.
- Heavy screens (¼" thick) changed quickly, safely...while mill is running.
- Large diameter, alloy steel shaft.
- Self-aligning, dustproof bearings.
- Separate, motor driven fan (optional).
- Heavy duty crusher-feeder (optional).
- 15-second floor-above screen change (optional).

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872 Bailey Avenue, Buffalo 6, N. Y.
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"Our Babcock layers needed only eggs...with Du Pont Hydan®

...says Monroe Babcock, President,

Monroe C. Babcock
President
Babcock Poultry Farm, Inc.

Telling of this experiment, Mr. Babcock reports, "During the first five months of full production our layers needed only 2¼ pounds of feed per pound of eggs produced (3½ lbs. of feed per dozen).

"The proper level of methionine in the diet of high-producing layers makes a big difference in performance, particularly during the peak of production. In a recent experiment we found the addition of 2 to 2½ pounds of 'Hydan' per ton of caged-layer ration resulted in 11¢ to 28¢ more profit per bird during the *first five full months of lay.*

"Representatives of the Du Pont Company approached us last summer with information indicating that a high-producing bird such as our Babcock layer is capable of producing a pound of eggs on less than 2½ pounds of practical ration...*if* the level of methionine in the diet is adequate.

"An arrangement was made with Dr. M. L. Scott, an authority on Poultry Nutrition, to design and supervise an experiment with methionine as a variable and coordinate with Du Pont Company and Dr. Hill of the Babcock Poultry Farm." In describing this experiment, Mr. Babcock says, "The hens used in this experiment were typical Babcock layers of the same background and housed in one of our commercial laying buildings. The experimental diets were fed as the only ration from the start of production, as is done in commercial practice.

"The test was started in July, and the results are cumulative from mid-August through mid-January. Egg size was normal, being 53-54 grams per egg at the start and about 62 grams per egg at the finish. Eggshell quality was uniformly excellent. In all respects the conditions of this experiment simulated commercial practice; therefore, the results are of special value. This experiment demonstrates the type of cooperation between geneticists, nutritionists and industry that makes for continuous agricultural progress."

From left to right: **Dr. Jack Hill,** *Director of Research at the Babcock Farm,* **Dr. M. L. Scott,** *an authority on poultry nutrition, and* **R. B. Bishop** *of the Du Pont Company coordinate test data in the Babcock Farm reception room.*

3½ pounds of feed per dozen feed supplement in ration"

Babcock Poultry Farm, Inc.

Summary of experiment

Four hundred thirty-two Babcock pullets were randomly distributed on the basis of body weight into 8 rows of double cages at about 2 weeks prior to the onset of egg production. The experimental diets were mixed under Dr. Scott's supervision and consisted of two practical high-efficiency formulas both with and without the methionine supplementation calculated to be necessary for maximum feed efficiency. Egg size and body weight were checked at the beginning and end of the experiment. Feed consumption and egg production were recorded at 30-day intervals. Although the test period included the cold-weather months of December and January, one diet supported a five-month daily average of 9.0 pounds eggs per 100 hens on an average feed consumption of 20.0 pounds feed per 100 hens daily. *This performance was equivalent to 2¼ pounds of feed per pound of eggs, or 3½ pounds of feed per dozen eggs for the five-month period.* With both control diets, the addition of "Hydan" increased production rate and improved feed conversion about 10%.

For more information on "Hydan" Feed Supplement write E. I. du Pont de Nemours & Co. (Inc.), Industrial & Biochemicals Dept., Wilmington 98, Del.

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Changes in Distribution Of Commercial Feed

By Dr. L. C. Cunningham
Cornell University

VOLUME OF FEED—Nearly 2 million tons of feeds are shipped into New York state annually—equivalent to 2 trainloads of 100 cars each daily. The volume is of course larger in eastern than in western New York. In retail dollar volume, this amounts to $175 million, according to the 1959 Census of Agriculture.

Sales tonnages of dairy feed in 1960 by reporting feed companies were twice as large in New York as any other state, and layer feeds ranked fourth among all states.

TREND IN FEED VOLUME—Grain production in New York state, even in the western section, is not likely to increase, and may even decrease some. But livestock feeding operations will be maintained, or perhaps increased, particularly dairy. Although poultry has decreased some, dairy cow numbers have held on a level trend. The rate of grain feeding per milk cow has gone up more than one third during the last 20 years.

Inshipments of feeds are expected to continue during the years ahead in approximately the same volume as that of recent decades. Although little or no change in volume of feed is expected, there will be changes in this industry.

CHANGES IN PROSPECT—These changes include:

—Fewer farmers but larger farm operations.

—More bulk handling of feed.

—Some tendency to fewer mixtures.

—More pickup and delivery service on home-grown grains.

—Increased mechanization of feeding operations on the farm.

—More pelleting of dairy feeds.

—Farmer insistence on more credit from dealers and others.

—Adaptation of dealer services to changed methods of feed distribution.

FEWER AND LARGER FARMS—By census count, the number of farms in New York state has been nearly cut in half since 1940. The decline is expected to continue. All types of farms have been reduced in number, but the sharpest cut has been in poultry farms.

The average size of both dairy and poultry farms has been increased. Some have become very large. Units of 60 cows or 25,000 layers are not uncommon. Feed services for these farms are considerably different from those of small operations. The much talked about cow pools of 1,000 or 2,000 animals have not become a reality in this state, nor are they likely to come in the near future.

BULK FEED—Bulk feed made up 32% of total commercial feed in the mid-Atlantic states which include New York. The Pacific Coast is highest with 60%. The national figure is 38%.

New York farmers have been slow to shift to bulk feed, because of small size of operation in many cases and because of uncertainty in their future farm business plans in others.

The trend toward larger and fewer farms will undoubtedly continue, which favors the further development of bulk handling of feeds.

PICKUP AND DELIVERY SERVICE—Along with increased size is the shift to more specialization in milking on a dairy farm. Although dairymen have already farmed out many jobs formerly performed by their own labor force, still others including pickup and delivery of their own home-grown grains will probably be hired done by many farmers.

For farmers who have significant

EDITOR'S NOTE: Dr. Cunningham of Cornell's department of agricultural economics reviews here trends in New York state's agricultural scene and how these trends are likely to shape the services demanded of feed manufacturers and dealers by milk, egg and meat producers. These prospective changes, also applicable to other areas of the nation, were originally noted in a talk presented by Dr. Cunningham at the convention of the Mutual Millers & Feed Dealers Assn. in Buffalo.

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The Burlap Council

amounts of home-grown grain, and many have, the dealer service of grinding and mixing is of continuing and even greater importance.

The services performed by local dealers where home-grown grain is of little importance are subject to careful review. Among large farm operators, delivery from local or regional mills direct to the farm in bulk of the major items of feed will undoubtedly spread. The need will continue, however, for such services as the minor lines of feed, credit, help on feed problems and the like.

MOBILE FEED SERVICE—Home grinding and mixing was performed at somewhat lower cost per 100 lb. than was either store or mobile service. This was one of the findings of a study of these methods in western New York. The trend to specialization is so strong as to preclude any significant return to home mixing of feeds. Mobile feed service is apparently competitive with store service, and has encouraged more and more dealers in some areas to offer pickup and delivery service on home-grown grains.

MECHANICAL FEEDING — One of the few remaining hand jobs on dairy farms is the feeding of cows in stanchion barns. Feed dealers have an interest in this problem because it involves the form of the mixed feed delivered.

A major breakthrough on mechanical feeding in the stable will likely occur in the next 5 to 10 years. Pelleting of feeds to use where cows are milked in parlors is increasing in popularity. And pelleting of feeds will no doubt be necessary in mechanical feeding in conventional stalls. Certainly bulk handling will also be a part of this development.

CREDIT—Basic to the problem of credit is one important fact. Even in this period of price-cost squeeze for agriculture generally, many farmers want to expand their operations faster than savings will permit. Consequently, they seek credit wherever it is available, including the feed dealer. Where the pressure for credit is strong, the farmer seeks credit not only on the feed, but also on perhaps the bulk feed bin and other related facilities.

DEALER SERVICES — The commercial services provided by farmers are undergoing considerable rearrangement and consolidation. An important one of these in this region is related to the shift to bulk milk tanks on farms and milk reload stations. This means one-way trucking service and some consolidation of country milk plants. This adjustment has an effect on feed hauling to the farm.

Telling an audience of feed dealers there will undoubtedly be fewer and larger milling operations is no more popular than making the same point about farms at a meeting of farmers, yet this is the case. Larger local and regional mills are in line with present adjustments in agriculture. One recent study indicated a necessary volume for efficiency of 10,000 tons annually and further economies up to something like 25,000 tons.

Increasing tonnages of mixed feeds will move from regional mills to farms, in which situations the local dealers' margins will be reduced accordingly.

Dealers' trucking services have been expanding and are expected to be even more important in the transportation picture of the future.

Granting the optimum amount of credit to farmers to hold or increase business, but to avoid financing things on the farm other than feed, is perhaps a feed dealer's stiffest challenge.

Prospects are dim for feed dealers, as well as for farmers, who insist on operating the same old way as in the past.

For feed dealers who have or can make the adjustments to meet the changing conditions in agriculture, the future appears to be reasonably bright. The same holds true for farmers.

Arkansas Speaker Calls For More Beef Feeding

BATESVILLE, ARK.—H. Layton Lindsay, vice president of the Arkansas division of the Kroger Co., was the principal speaker at a recent banquet of the J. K. Southerland Industries, Batesville feed and poultry firm.

At the banquet, which was held to salute agricultural progress in north central Arkansas, Mr. Lindsay called for the establishment of more beef enterprises in the area.

He told the more than 300 persons attending the event that producers could use the poultry industry in the region as a guide. He said that his firm would like to purchase more of its beef in Arkansas than it has in the past.

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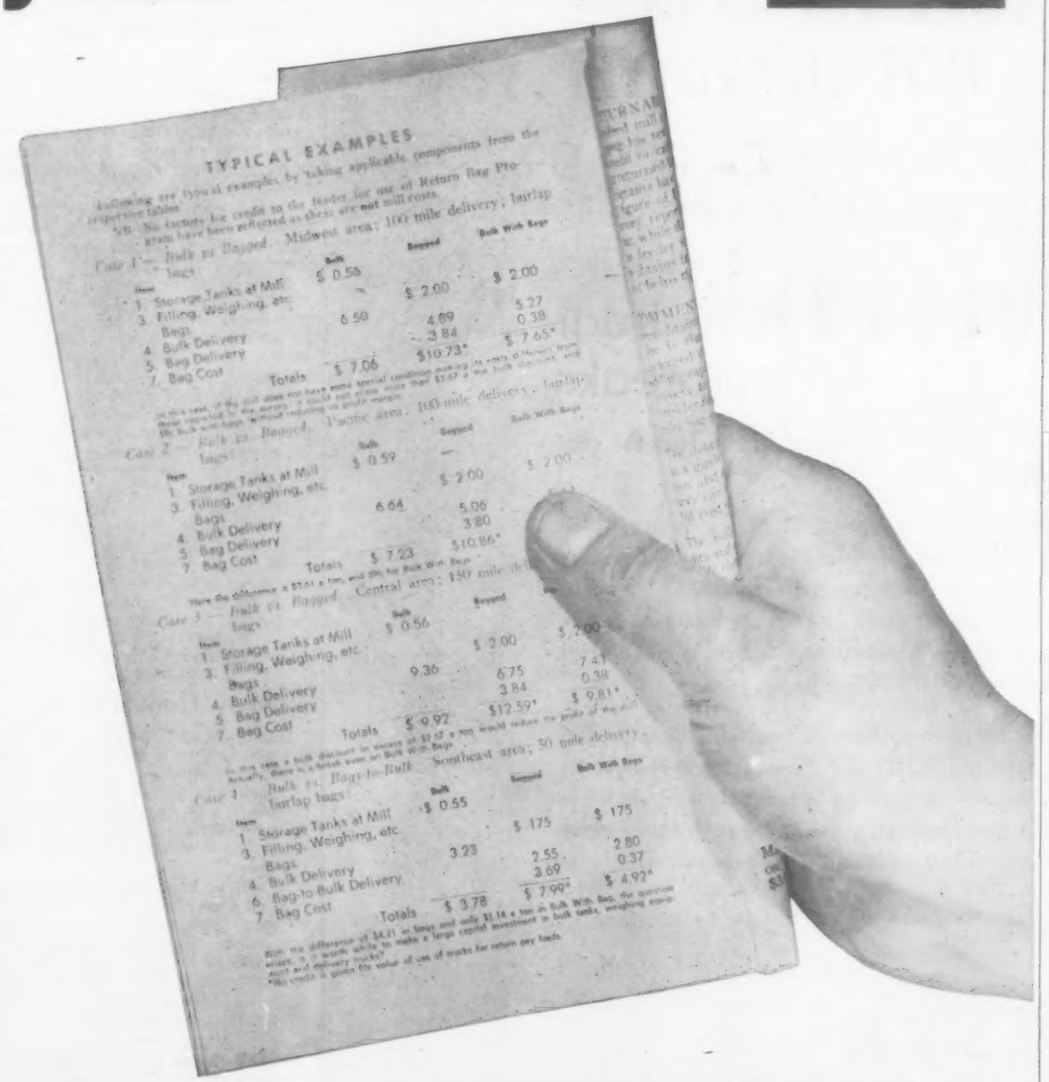
TYPICAL EXAMPLES
Case 1 — Bulk to Bagged. Midwest area; 100 mile delivery; burlap bags
Case 2 — Bulk to Bagged. Pacific area; 100 mile delivery; burlap bags
Case 3 — Bulk to Bagged. Central area; 150 mile delivery; burlap bags
Case 4 — Bulk to Bag-to-Bulk. Southeast area; 50 mile delivery; burlap bags

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Ralston Purina Co. Announces 1961-62 Research Fellowships

ST. LOUIS—Ten graduate students in agricultural colleges have been named recipients of the Ralston Purina Co. Research Fellowship Awards for 1961-62 by the awards committee which met here, according to J. D. Sykes, Purina vice president.

Each fellowship amounts to $2,000 and the purpose of the program, according to the company, is to help train outstanding college students for leadership in the science of livestock and poultry production.

The recipients and the institution where the graduate work will be done are: Harold H. Hodson, Iowa State University, Andrew J. Lee, Cornell University, and James M. Philpot, Oklahoma State University, dairy husbandry; Earl W. Gleaves, Oklahoma State University, Nugawilage D. Hugara, University of Georgia, Lealon V. Tonkinson, Oklahoma State University, poultry husbandry; Donald J. Dierschke, University of California at Davis, Don O. Pinney, Oklahoma State University, and Leon J. Wernimont, Iowa State University, animal husbandry, and Ralph D. McQueen, University of Illinois, veterinary medicine.

Competition for the Purina fellowships this year was unusually strong, Mr. Sykes said. The field of applicants was one of the largest and best qualified since the fellowships were first offered 13 years ago, indicating a growing interest in graduate work among agricultural college students, Mr. Sykes commented.

The competition for Purina Research Fellowships is open to agricultural students in colleges throughout the United States and in Canada and Puerto Rico, Mr. Sykes said. Recipients are chosen on the basis of their scholastic records and their stated objectives in animal agriculture, he stated.

The awards committee which made the selections consists of five agricultural college leaders. They are: Dr. Robert MacVicar, Oklahoma State University; Dr. T. J. Cunha, University of Florida; Dr. R. H. Thayer, Oklahoma State University; Dr. W. A. Hagan, National Animal Disease Laboratory, Ames, Iowa, and Dr. N. L. Jacobson, Iowa State University.

Feeding Study Set

FARGO, N.D.—The economic potential for expansion of livestock feeding in the upper Midwest will be studied this summer in a new research project of the department of agricultural economics, North Dakota State University College of Agriculture.

Making the announcement of the research project was Arlon G. Hazen, director, North Dakota Agricultural Experiment Station.

He said that a grant of $6,000 to North Dakota State University has been approved by the Upper Midwest Economic Study in support of the research project. The Upper Midwest Economic Study is financed by a grant from the Ford Foundation and by donations of business firms within the Ninth Federal Reserve District—Minnesota, North Dakota, South Dakota, Montana, northwestern Wisconsin and upper Michigan.

The purpose of the upper Midwest program is to provide information and understanding that will lead to more rapid economic development of the area, to advance scholarship in the field and to provide a model for continuing economic analysis of the upper Midwest and for studies of other regions, Mr. Hazen said.

Peavey Construction

EAST GRAND FORKS, MINN.—Construction of a 120,000 bu. annex at East Grand Forks has been started, according to Leo J. Carlin, vice president and general manager of Peavey Elevators, Minneapolis. The new addition will have 32 grain storage bins.

It will be located adjacent to the existing Peavey Elevator which will act as a truck receiving unit for the new annex. Combined capacity will total 205,000 bu.

Contractor is T. E. Ibberson, Minneapolis. Planned completion date is for not later than next July 1.

NEW FOOD SUPPLEMENTS

MARSHALLTOWN, IOWA—S & O Products, Marshalltown, manufacturer of livestock minerals under the brand name of So-Rite, is starting a new line of mineral food supplements for dogs, cats, horses and ponies.

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E. D. Schnick W. L. Chalfin

New Assignments for 3 at Swift & Co.

CHICAGO — New assignments for three Swift & Co. men have been announced by S. E. Cramer, head of the organization's oil mill department at Chicago.

W. L. Morris will be in charge of sales of cotton linters for all of Swift's cottonseed oil mills.

Mr. Morris started his career with Swift at the Augusta, Ga., oil mill in 1930. Subsequently, he held various positions at Chicago; Little Rock, Ark.; Blytheville, Ark., and Memphis, where he has been the past six years.

In another appointment, W. L. Chalfin was transferred to Memphis and will be in charge of the Memphis sales division for cottonseed meal, hulls and southern production soybean meal. He will work directly under supervision of the oil meal department at Chicago.

Mr. Chalfin, who has been with Swift nine years, most recently has been sales manager at the company's soybean mill at Fostoria, Ohio.

Mr. Morris and Mr. Chalfin will headquarter in the oil mill department sales division office adjacent to the Swift oil mill in Memphis.

Succeeding Mr. Chalfin as sales manager at Fostoria will be E. D. Schnick, former assistant sales manager at the Frankfort, Ind., soybean mill. Mr. Schnick started with Swift at Frankfort in 1959.

Production School Committee Expands

KANSAS CITY—The Feed Production School committee on definitions has been expanded to include representatives of other important groups in the feed manufacturing industry. Lloyd Larson, president, announced that Bruce Poundstone, secretary, Association of American Feed Control Officials; Lee Boyd, American Feed Manufacturers Assn., and Dr. Robert Schoeff, Kansas State University, are now working to refine definitions already developed, and to help gain general acceptance of the definitions by the industry.

Definitions completed to date are for finished feed forms, feeds in process, and processing terms and will be presented at the 1961 Feed Production School, Sept. 11-13, Continental Hotel, Kansas City.

Hatchery to Open

SILOAM SPRINGS, ARK.—Cobb's Pedigreed Chicks, Inc., is opening a new hatchery here.

The new facility will serve Arkansas, Oklahoma, Missouri, Texas, Kansas, parts of Tennessee and Mississippi and Louisiana. It will produce Cobb White Rock breeding stock for use by hatcheries and poultry integrators in this region.

Manager of the local unit is Harrison S. Arthur, a veteran New England poultryman. Sales and service will be handled by Charles Jones.

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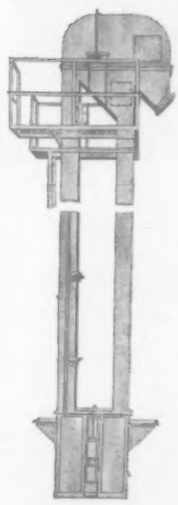
Fritz Pampas Heads Kansas Dehydrators

WICHITA, KANSAS—Fritz Pampas, Noris (Kansas) Dehydrating Co., was elected president of the Kansas Dehydrators Assn. at a recent meeting of 25 dehydrators from Kansas, Oklahoma, Colorado and Nebraska here.

Elected vice president of the association was Bob Bunten, Kaw Dehydrating Co., Topeka, Kansas. Norman Chamberlain, L. C. Chamberlain Co., Oxford, Kansas, was elected secretary-treasurer.

Named to Sales Area

NEW YORK—Raymond Bag Corp. has announced that Al P. Wolff has become associated with the firm's New York City sales office. He will be contacting accounts in the area in addition to those in Metropolitan New York.



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DO-IT-YOURSELF WITH CLOROFUME®

Flexible Service Provided Producers in Midwest Area From New $500,000 Feed Mill

By Al P. Nelson
Feedstuffs Special Writer

Whether a customer wants a complete feed, supplements or a custom grind and mix service, he can get it at the new $500,000 feed plant recently erected by Columbian Feed Co. at Geneseo, Ill.

The mill, of slip form concrete construction, was designed and built by Roberts Construction Co., Sabetha, Kansas. It will serve the feed needs of customers in western Illinois and eastern Iowa. It is located on a three acre tract of land and has Rock Island railroad facilities.

Lowell Creach, mill manager, and M. E. Trowbridge, sales manager, note that the mill can handle small and large orders for feeders, and also can supply complete feeds and supplement to large feeders. In this way, the mill has interest for all feeders in the area whether they use small or large feed tonnages.

The mill is 55 by 33 ft. and the warehouse measures 96 by 33 ft.

Six different formulas of cattle feed are manufactured at the plant from supplements furnished by the parent company, Columbian Hog & Cattle Powder Co., Kansas City. Complete hog feeds of 12, 14 and 16% are made at the Geneseo mill, as well as 34 and 38% hog supplement.

100 Tons in 8 Hours

The plant has a capacity of approximately 100 tons per eight-hour day. Storage capacity for more than 50,000 bu. of grain directly over the driveway and additional storage of 20,000 bu. over the 5,000 lb. batch mixer is included. Also, eight carloads of bulk oil meals and concentrates can be stored.

All operations are controlled at a master pushbutton panel. A printomatic roll tape on the scale dial is coded for each material and is used for permanent batch records.

The mill receives feeds and ingredients by both rail and truck. Feedstuffs which arrive by rail go into a between-the-rails dump sink on the west side of the mill where an Ehrsam Dracon conveyor takes it into the large basement and to an Ehrsam elevator. Each of the two Ehrsam receiving legs is 135 ft. high. They empty into a double Roto Flo distributor and can be set from the work floor. A Hardy scale for weighing incoming ingredients or for inventory is located near the rail receiving facilities.

On the driveway at the east end of the mill, trucks can unload grain and soft feed into a dump-through Fairbanks Morse scale (50 ton capacity and 60 ft. long). There is also a separate receiving sink in this drive for ear corn which goes to the sheller or to the hammermill.

The grinding, mixing and pelleting operations are handled with a 75 h.p. Prater hammermill, a 2-ton Ehrsam mixer and surge hopper, and a 100 h.p. Multi-Duty Wenger pellet mill with crumblizing and molasses equipment. The hammermill and mixer are located in the spacious basement and the pellet mill on the first floor. A Triumph corn sheller, a Wenger 24-ft. pellet cooler, 100 h.p. Wenger boiler, molasses storage of 12,000 lb., and 8,000 lb. animal fat storage, are also located in the basement.

Other equipment includes a Hume-Fry grain dryer, Roskamp huller and roller and an S. Howes grain cleaner.

The plant has 48 bins of poured concrete construction as follows:

Six grain bins, 8,000 bu. capacity.

Five 100-ton bins for soft feed storage.

Two 50-ton bins for soft feed ingredients.

Ten 10-ton bins over batching scale. (Ground feed and concentrate.)

Four 5-ton bins over batch scale (ingredients).

Four 10-ton bins over packer.

Four 10-ton bins over pellet mill.

Four 5-ton bins either to packer or to bulk unloading.

Seven other bins for grain for drying and also for oats hulling, and supply bins over hammermill.

Custom Griading

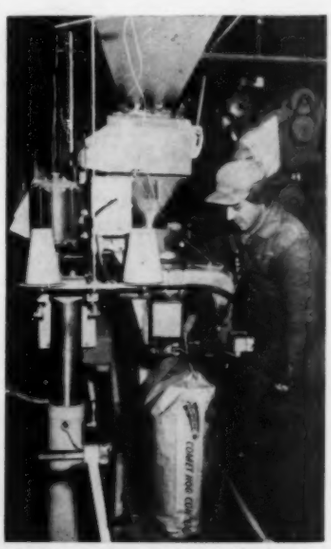
Custom grinding is done with the same equipment. A separate bin is set aside for custom grain when received and ground for a holding bin above the batch scale, then run into the batch scale and mixer with concentrate added. Most custom mix is in one ton lots, Mr. Creach reports. The service is offered chiefly as a convenience to customers. Grind and mix rates are 15¢ cwt.

About 80% of the feed sold at the plant at present is in bags. For this operation a Richardson automatic bagger is used. Two bulk trucks are used in the delivery operation. Each is an International, with a 7-ton capacity Wenger bag-bulk combination.

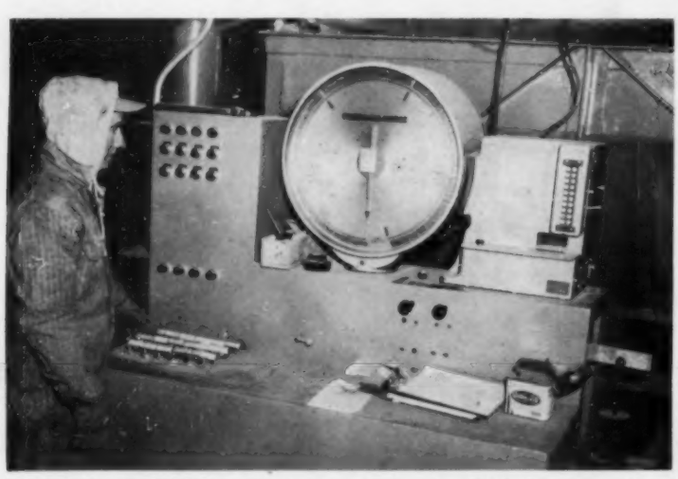
All bins can be set from the work floor, Mr. Creach notes, and so can the two receiving legs and the leg for transporting pellets. The leg for the corn sheller and for the oat huller can also be set on this level. Hammermill distribution as well can be regulated from this area.

The plant operates with 13 employees, reports Mr. Creach. At pres-

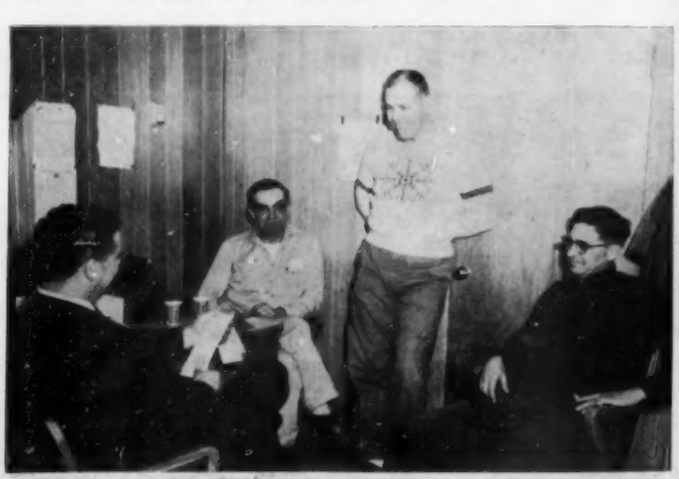
NEW MILL—This $500,000 feed plant was completed recently at Geneseo, Ill., for Columbian Feed Co. Rail siding is at far left and truck receiving area is at right.



BAGGER—Shown in operation here is Richardson automatic bagger. About 80% of the feed sold at the Columbian Feed Co. plant in Geneseo, Ill., is in bags.



BATCHING CONTROLS—Employee of Columbian Feed Co. demonstrates operation of batching controls in new mill.



NUTRITIONIST AND SALESMEN—Val Mason (left, back to camera), nutritionist, counsels with three of Columbian Feed Co.'s salesmen in plant office at Geneseo, Ill.

LOUNGE—Lowell Creach (left), mill manager, and M. E. Trowbridge (right), sales manager, talk over feeding program with customer in plant's comfortable lounge.

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NATICO is the richest dry molasses product available! Add it to your feed for more profitable production and more *economical feeding costs.* Natico is an all sugar cane molasses product, adds attractive new color and fragrance to feeds . . . even makes dry home-grown grains and roughages tastier to livestock. Try Natico and watch feeding costs go down!

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☐ send Paco sample
- ☐ 2-oz.
- ☐ 2-lb.
- ☐ 10-lb.
- ☐ 50-lb.

☐ send Natico sample
- ☐ 2-oz.
- ☐ 2-lb.
- ☐ 10-lb.
- ☐ 50-lb.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

COFFEE FOR CUSTOMERS — Columbian Feed Co. has hot coffee on hand all day long for its customers.

ent the operating schedule is eight hours, six days a week.

A sales manager and five salesmen handle feed and supplement sales in Henry County. Within a radius of 50 miles there are 21 salesmen whose customers are served directly from the Geneseo mill. Practically all sales are made direct to feeders. A large volume of business is concentrated in Henry County, Mr. Trowbridge noted. The company also has warehouses and a delivery system throughout Illinois and also in eastern Iowa and in western Indiana.

Val Mason, research nutritionist for Columbian Hog & Cattle Powder Co., spends some time at the Geneseo mill. He works closely with the Geneseo plant officials and salesmen and often visits area feeders. "In this way customers get expert advice on hog and cattle feeding problems, so that they are often able to get quicker gains at lower cost," Mr. Creach commented.

Reception Room

The new mill has a sizeable office and a separate reception room. Here plant officials and salesmen can visit with feeders and discuss individual customer feeding problems. Mr. Trowbridge says that the plant's selling program is geared very closely to the customer's needs and every effort is made to discuss his feed problems in detail. This personal attention is what many customers like, he states.

For a firm which delivers so much feed to farm lots in a large area, the setting up of an efficient delivery program is very vital, says Mr. Creach. The plant has posted the following delivery rules which show the attention which the management places on the proper handling of feed between the plant and the customer's storage area:

TIPS TO EMPLOYEES

Courtesy to customers is one of the first requirements expected of its employees.

Each employee in his area **IS** the company. The company is judged by your actions and you can directly aid in our march forward or you can hinder us.

Little details assume big proportions in the mind of the customer, either with good or bad effects.

The company expects its drivers to make good time in deliveries to farms. However, it doesn't expect you to break speed limits.

You should make a reasonably slow entrance into each farm yard. Children can be playing in the area. Also, livestock can be frightened by a sudden entrance.

Never set bags of feed on damp or muddy floors. Make every effort to find dry lumber, empty bags or other material to set feed bags on.

Pile in neat piles. If two or more kinds of feed are being delivered, make all piles available by piling the bags at right angles to the wall. Never place one kind of feed against the wall with others on the outside.

If old feed is on hand on arrival of fresh, put the older feed in front of the fresh feed so it will be fed first. Always put the Comet (brand) side of bags on the outside or exposed side. It's good advertising.

Leave notice that the feed is delivered if no one is present on making your delivery. Either notify the housewife or leave delivery slip in door.

Make every effort to give the customer everything he could ask for in prompt, neat, friendly deliveries.

Drivers assigned to trucks are expected to keep them in top condition. Check tires, oil, grease as well as gas each day, before beginning deliveries. Report to the management anything unusual that may need attention.

PELLET MILL — Lowell Creach, manager of the Columbian mill, describes operation of 100 h.p. Wenger Multi-Duty pellet mill with crumblizing and molasses equipment.

WASHINGTON FIRE

TOPPENISH, WASH.—One of the oldest landmarks here, the Asbury Feed & Grain Co. warehouse and elevator, was destroyed by fire recently. Witnesses said an unidentified person was seen running from the building just before the fire was discovered. The building, about 100 by 120 ft., was bought from the Asbury estate Feb. 9, 1961, by Lee Gomez, who operated the Gomez Hauling Co. He estimated the damage at about $35,000.

McCabe Grain Company Limited

WINNIPEG-VANCOUVER

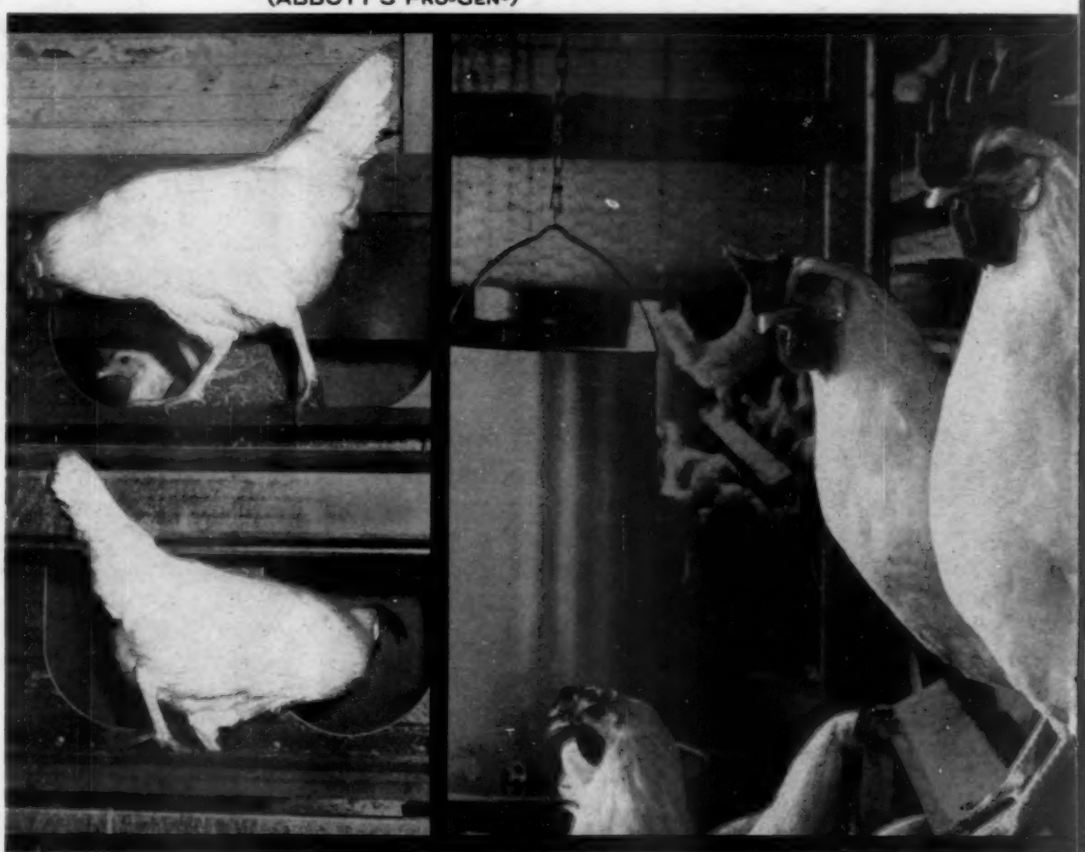
LONDON, ENGLAND

Schwartz & Co., (Grain) Ltd.
Victoria Products and Grain
(overseas agents) Ltd.

Here's Why...

ARSANILIC ACID is used

(ABBOTT'S PRO-GEN®)



In test after test, Arsanilic Acid performs best under practical conditions!

When good feeds, top management and first-rate housing combine to keep hens healthy, laying percentages are almost sure to be satisfactory. But these three basic factors of good poultry raising cost money—extra money. They represent ideals . . . always desirable but not always attainable.

Arsanilic Acid Works Best When It's Needed Most. Most egg producers take a practical viewpoint. They know they can't operate like a research farm. Yet, production is the lifeline of their business . . . so, they turn to Arsanilic Acid to help keep hens healthy—keep production up.

Almost every hen is host to disease germs. Under practical conditions—during stress—hens may lack the vitality to fight off infection. That's where Arsanilic Acid comes in . . . and the tougher the battle, the harder Arsanilic Acid fights. It opposes harmful bacteria in the intestinal tract—helps protect against active disease—helps prevent laying slumps.

USDA Gives Final Report on Turkey Production in 1960

WASHINGTON—In a review of turkey production in 1960, the U.S. Department of Agriculture states that the number of turkeys produced was 84.8 million, compared with 84.5 million raised in 1959.

USDA pointed out that there were increases of 10% in western states, 7% in the south central states and 5% in the west north central area. These increases, it said, more than offset the 25% increase in the south Atlantic, 6% in the north Atlantic and 4% in the east north central states.

The USDA report shows that Minnesota and California led production with about 14.5 million birds each. Iowa was in third place with 7.7 million. Other top producing states were: Virginia, 4.7; Missouri, 4.3; Wisconsin, 4.1; Texas, 3.9; Ohio and Indiana, 3.1, and Utah, 2.8.

USDA noted that the west north central states, the largest producing region, raised about 35% of the nation's turkeys. The western states had 25%, the east north central area 15%, the south Atlantic 11%, the south central area 10% and the north Atlantic region 4%.

Heavy Breeds Up

The breed breakdown of the 1960 production shows that 74.4 million of the birds were heavy breed turkeys, up 8% from 1959. The crop of heavy white turkeys was 30% of all heavies compared with 27% in 1959. Light breed turkeys, which accounted for 12% of the total raised, were down 34% from 1959.

Government figures show that 83.4 million of the birds raised were sold.

Growers indicated that they sold 80% of their light breed production, 32% of their heavy whites and 1% of their other heavies as fryer-roasters.

The average price received for turkeys sold in 1960 was 25.4¢ compared with a 23.9¢ average a year earlier. Prices for the first 11 months of the year averaged higher than 1959 while December prices were lower than for a year earlier.

USDA said that gross income from sales of 1,488 million pounds live weight of turkeys in 1960 totaled $377.2 million, 9% more than in 1959.

Loss of poults in 1960 was 8.8% of those started, compared with 8.6 a year earlier, according to USDA. Loss of breeding stock as a per cent of breeders on hand Jan. 1 was 5.1% compared with 5.4% in 1959.

UNION BID REJECTED

ST. JOSEPH, MO.—Employees of the Benton Du-It Feeds Co. have rejected the bid of United Cereal Workers Local 125 to continue as their bargaining agent. The union was rejected at a meeting conducted at the Benton plant under the supervision of the National Labor Relations Board.

Vet Students Hear Importance of Good Vet-Feed Man Relation

COLUMBIA, MO.—Student veterinarians at the University of Missouri were told of the importance of good relationships between the veterinarian and the feed man here April 10.

Speaking before the student chapter of the American Veterinary Medical Assn., Lloyd S. Larson, executive vice president of the Midwest Feed Manufacturers Assn., outlined reasons why there is need for cooperation.

"We are living in an age of constant change, where failure to make a change can result in the extinction of a business or profession. Changes that are occurring in animal agriculture have brought about specialization. Even the professional has to specialize, and you should keep in mind that as you become involved in animal nutrition, either in recommendations or actual sales, you should either become qualified on matters of nutrition or team up with someone who is.

"We certainly believe that the feed man is the logical one for you to team up with," Mr. Larson continued. "But historical rights do not give the feed man this continued privilege if someone else can fill the need better."

Mr. Larson urged the future veterinarians to get acquainted with the feed men in their area, taking the initiative.

Appearing on a question and answer panel were Pete Rea, Red Comb Pioneer Mills, Marshall, Mo., and Dr. Robert Randolph, recently graduated veterinarian from Marshall.

During the coming months, the Veterinary-Nutrition Council of the Midwest Feed Manufacturers Assn. is planning to work closely with schools of veterinary medicine in Midwest's eight-state area to further promote cooperation, according to Dr. James Bailey, Walnut Grove Products, Alantic, Iowa, chairman of the council.

Hales & Hunter Names Regional Sales Manager

CHICAGO — Emmett M. Williams has been named regional sales manager for Hales & Hunter Co.'s Atlantic region. Appointment was made by Victor F. Holt, field sales manager.

E. M. Williams

Mr. Williams has 22 years of feed sales experience since graduating from Mississippi State College with a degree in animal husbandry.

in so many 1961 layer feeds!

Low Cost—Big Returns. Arsanilic Acid is the low-cost production builder that helps hens fill more egg baskets any time of year. It costs only a couple of pennies per hen per year—costs so little your customers can't afford to be without it. In a 12-month feeding trial in Michigan, a good ration plus Arsanilic Acid produced 15.7% more eggs. Yet, an increase of only two eggs a day per 1,000 hens paid for the Arsanilic Acid.

Useful In All Types Of Feeds. Every year, more egg producers are asking for low-cost Arsanilic Acid in all their poultry feeds. Not because they're trying to replace good feeds, good management and good facilities with medication, but because they know that, under practical conditions, Arsanilic Acid-fed hens stay healthier and lay better.

Available In Two Convenient Forms. Arsanilic Acid is available in pure form or in premix form (one pound of premix is enough for one ton of complete feed). It's manufactured by Abbott and sold under the trade name PRO-GEN®. Ask your Abbott man for details, or call Abbott Laboratories, Chemical Marketing Division, North Chicago, Illinois. 101585

Almost Every Hen Needs Arsanilic Acid

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CHEMICAL MARKETING DIVISION
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EXPELLERS®
SOLVENT EXTRACTION EQUIPMENT
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Write for information and prices
The V. D. ANDERSON COMPANY
Division of International Basic Economy Corporation
1944 West 96th Street, Cleveland 2, Ohio

Broiler Tests Show Gains in Feed Efficiency

FAYETTEVILLE, ARK. — Reports on the 17th and 18th meat performance broiler tests conducted by the University of Arkansas' Agricultural Experiment Station last summer and fall indicate that improvements still are being made in efficiency in converting feed into broiler meat.

Feed conversion—pounds of chickens produced per 100 lb. of feed—averaged 50.69 and 53.66 in the two tests. Back in 1954, in meat performance Test 2, feed conversion was only 37 lb.

Reports on Tests 17 and 18 have just been published by the experiment station in Report Series 97. In these two tests, broilers were grown for only 7 weeks, rather than the 10 weeks needed to grow the birds to market age in early tests. Live weights at 7 weeks averaged 2.52 and 2.75 lb. in Test 17 and 18. Feed cost per pound of chicken, based on an arbitrary cost of 5¢ per pound of feed, came to 9.87¢ and 9.32¢. In the two tests conducted in 1959, feed cost per pound of chicken had averaged 10.02 and 10.32¢.

The tests are conducted by the Arkansas station for participants in the National Poultry Improvement Plan. The authors of the report point out that they are descriptive tests of the performance of broiler strains and strain-crosses under stated circumstances, rather than being competitions.

Report Series 96, also just published, covers egg phase and reproduction Test 4. In this test, pullets raised from eggs hatched in March, 1959, were housed in August and their egg production measured during a test period of 267 days. These female lines were test-mated with certain male lines and their progeny were raised in two 8-week broiler trials. Arkansas is the only state to be carrying on such a reproduction test.

Anyone interested in learning more about the tests may obtain single copies of the reports, free of charge, from county extension offices in Arkansas or from the Bulletin Room, University of Arkansas Agricultural Experiment Station, Fayetteville. Request should be made for Report Series 96 and 97.

Daffin Corp. Plans Office in Europe

HOPKINS, MINN.—Daffin Corp. is to have a new permanent office in Europe soon. Dean W. Alexander of the international division of Daffin has left for Europe to open his company's first office there, the firm announced.

As resident sales manager, Mr. Alexander will call on current distributors and set up new distributors for Daffin, manufacturers of farm machinery and equipment and systems for handling granulated materials, the announcement said.

Mr. Alexander also will seek joint manufacturing ventures in Europe for Daffin, it was stated. The company now manufactures all of its products in the U.S., but plans foreign manufacturing arrangements.

John Deere Chemical Names Dr. L. E. Craig

PRYOR, OKLA.—Dr. L. E. Craig has been named to the newly created post of director of research and technical service for John Deere Chemical Co. here.

Dr. Craig will be in charge of all phases of research and technical services for both the Pryor and Tulsa plants.

Dr. Craig has been with Deere & Co.'s chemical division, formerly Grand River chemical division, since early 1954. He has been director of research since 1956.

He is a graduate of Central College, Fayette, Mo., and he obtained his Ph.D. degree in chemistry from the University of Rochester, Rochester, N.Y.

Improve and enrich your poultry and livestock feed with SUPER CAL

PURE REEF OYSTER SHELL FLOUR-FREE TRACE MINERALS FROM THE SEA

Shelley says

"NUTRITIONISTS WILL BACK ME UP..."

Every large feed manufacturer recommends oyster shell in feeding-management bulletins.

They all agree that oyster shell produces far more eggs. Improves eggshell quality, too. Substitutes fall flat. That's why you should always specify SHELLBUILDER, the **pure** reef oyster shell.

- Properly sized.
- Washed twice and HEAT STERILIZED.
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DEALERS: check your profit on SHELLBUILDER. You will agree it is exceptional.

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LET US PROVE IT TO YOU!

Arbor Acres 50's are so much easier to grow

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Ultra-Life does it again ....

A NEW CONCEPT IN SWINE NUTRITION

Ultra-Life

PIG Y-Z

with exclusive "ACCELERATED DIGESTIVE ACTION"

including NUTRIENT DIGESTERS

Zymase - Maltase - Diatase - Invertase - Endotryptase
Protease - Carboxylase - Oxidase - Lactic Ferments
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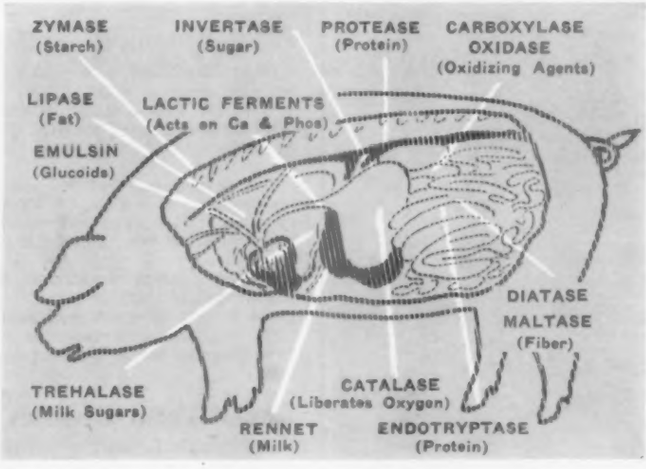
THE ACTION OF NUTRIENT DIGESTERS HELPS PIGS GROW FASTER



"ACCELERATED DIGESTIVE ACTION" GIVES FAST, EARLY GAINS — PIGS EAT SOLID FEEDS QUICKER —

GROWS HOGS FASTER — MORE EFFICIENTLY

New PIG Y-Z with "Accelerated Digestive Action" helps pigs digest feed nutrients earlier in life. New pigs get a faster start, weigh more at weaning time, and continue rapid growth. Feed conversions are lower with New PIG Y-Z. Powerful nutrient digesters help pigs break down feed nutrients. For example: Lipase, digests fats; Zymase, digests starches; Endotryptase, digests protein; and so forth.

The illustration above shows all these digesters in PIG Y-Z, and the nutrients each one digests.

Nutrient Digesters in Ultra-Life PIG Y-Z go to work in your feed formula. Pigs receive these nutrient digesters in their daily feed to achieve better utilization, faster gains, and maximum economy of production. They absorb more nutrients from the feed. Grow faster — stronger.

Ultra-Life leads the way to make these new developments available for Your Brand Hog Feeds. Look to the Ultra-Life Program for more feed sales — increased profits — from your feed production facilities. Let's Get Started.

ADD NEW PIG Y-Z TO YOUR HOG PROGRAM

Mail The Coupon Today!

ULTRA-LIFE LABORATORIES, INC.
East St. Louis, Illinois

Yes, we're interested in PIG Y-Z and the Ultra-Life Hog Program.

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One of the Country's Oldest and Largest Manufacturers of Vitamin and Trace Mine[illegible]

MORE PROFIT FOR YOU
Big Savings for Poultrymen

SHELLMAKER

LOWEST COST CALCIUM SUPPLEMENT FOR LAYING HENS—DOES A GOOD GRIT JOB, TOO.

Shellmaker is produced from high calcium limestone formed millions of years ago from shell and other calcareous deposits under the sea that one time covered the entire land area now known as the Mississippi River basin.

Shellmaker is slowly soluble in the gizzard to supply most effectively all the extra calcium the hen needs for building strong egg shells. It is also hard enough to do a good grit job as shown in feeding trials at several state experiment stations.

Write for information and prices today.

CALCIUM CARBONATE COMPANY
520 SOUTH FIFTH STREET, QUINCY, ILLINOIS

Members Added

KANSAS CITY—Feed Production School, Inc., has announced that Warren Armstrong, quality control and formulation manager, Nutrena Mills, and James Pierce, quality control manager, Walnut Grove Products Co., are now members of the product control committee headed by Max Cooley, Hoffman-Taff.

Mr. Pierce and Mr. Armstrong will both take part in the 1961 Feed Production School, Sept. 11-13, Continental Hotel, Kansas City. Mr. Armstrong is assisting in the preparation of a feed ingredients manual containing information on (1) sampling and inspection and (2) nutritional and physical characteristics of ingredients, to be used as quality guides.

An audio-visual series on practical quality control procedures and FDA requirements is being prepared by Mr. Pierce for presentation at the Production School.

Vets Oppose Sale of Medicants by Dealers

TORONTO—Opposition to Ontario retail feed dealer sale of animal medicants has developed from a new, if not entirely unexpected, source. While seemingly disinterested in so far as sale of poultry medicants was concerned, members of the veterinary fraternity are reportedly organizing their forces for an all-out attack against the sale of animal health products by allegedly unqualified parties.

It is said that their case is weak if druggests are permitted the right to sell animal medicants to all comers on open order and it is rumored that the vets will seek prescription rating for all drug products used in the prevention and control of animal diseases.

It is reported to be scarcely perceivable that any attempt will be made to nullify exemptions presently in effect by virtue of registration under the feeding stuffs act, but shelf sale and use of medicants under custom-mix order would probably be affected.

The resistance movement appears to be gaining momentum as charges under the pharmacy act are becoming matters of almost weekly occurrence in the retail feed trade.

No actual prosecutions have been reported within recent weeks, and it was hoped that actions could have been deferred until regulations under the pharmacy act had been amended in line with industry request.

It is now evident that some opposing influence is being exerted at department level which will at least delay any official move toward legalization of sale of animal health products by feed and farm supply dealers.

Add Batching System

BERN, KANSAS — A pushbutton batching system, with 54 overhead bins to the scale and for bulk feed and bulk feed loading, has been added to the facilities of the Lortcher Grain Co. at Bern.

The new system includes a 2-ton horizontal mixer with Combs air-operated scale hopper and electrical control console with automatic timing cycle.

The new system is a straight flow plan receiving bulk materials and grain in one driveway and loading bulk feed and bulk molasses feed from overhead bins in a second driveway.

Layer Total Doubles

SPRINGDALE, ARK. — The number of laying hens on farms in Washington, Madison and Benton counties of Arkansas has increased more than 100% in the past few months, according to an official of Tyson's Poultry, Inc.

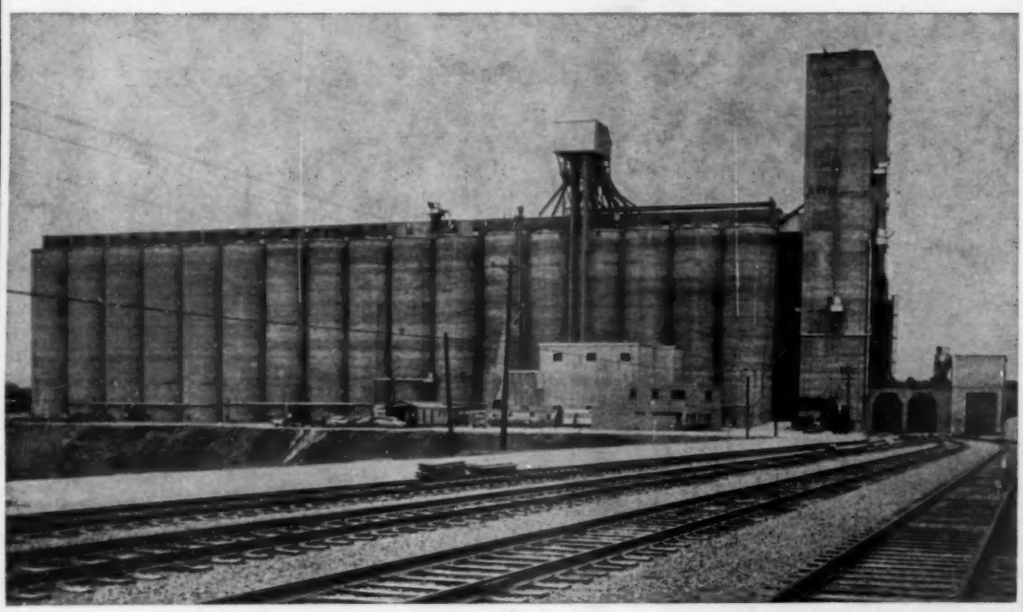
Ralph Blythe said there are 520,000 layers in the three county northwest Arkansas area compared to only 258,000 in 1959.

Mr. Blythe made the announcement after studying layer flocks in the region. He is chairman of a district committee appointed to survey the hen population to determine the volume of available eggs.

Another gateway to the world

PORT CONTINENTAL ELEVATOR

SAVAGE, MINNESOTA



These Modern Features Serve YOU

—Railroad car dump unloads 10 cars per hour
—Two truck dumps unload 20 trucks per hour
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The nationwide and worldwide facilities of Continental Grain Company elevators and sales offices

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PUT GUARANTEED POTENCY RESULTS INTO YOUR OWN FEEDS AT LOW COST!

JERSEE VITAL-MIN HAS NEVER FAILED TO GIVE GUARANTEED POTENCY RESULTS!

Contains the necessary Vitamins, Antibiotics, Amino Acids and Trace Minerals to Vitamin Fortify your own feeds for just a few cents a bag . . JERSEE VITAL-MIN makes your feeds better, brings you more satisfied customers.

CAF-SUPP

Contains guaranteed levels of Vitamin A, Vitamin D and Aureomycin. Guaranteed feeding results.

Write today for dealers' sales helps. Jobber and distributor franchises are available!

THE JERSEE CO. MINNEAPOLIS MINN.

"Stilbosol gives us an extra ½ lb. daily gain"

"That's for both steers and heifers, too. I know that sounds high, but that's what I estimated they did last year," reports Jack Dunlap, Professional Farm Manager, Williamsport, Ohio.

"I quit feeding Stilbosol for a spell last year. Went back to it, though. Why? Because I'm in this business to make money and Stilbosol helps me make it.

"I own nine farms and manage another twenty-two. About 12,000 acres in all. We've got 800 cows and feed out 1,200 to 1,500 head of cattle a year. We also raise 10,000 hogs a year. We sell cattle every month. We've got to. And my steers never did better than this winter (1961)."

Jack Dunlap is a man who speaks with authority. He is a thirty-two-year veteran in the cattle feeding business and is past president of the Ohio Farm Managers' Association. He is also a member of the American Farm Managers' Association and a graduate of Ohio State University.

"You've got to keep abreast of things in this business. And that includes fertilizing for a good corn crop, good breeding practices, practical farm management; and you've got to take advantage of developments like Stilbosol. I'll tell you one thing. I know Stilbosol makes me money," Jack concluded.

After seven years, Stilbosol continues to give feeders an extra 15% gain on 10% less feed.

Stilbosol®

(diethylstilbestrol premix)

ELANCO

Makers of HYGROMIX® (S. hygroscopicus fermentation products) • Streptomycin Sulfate
Vitamin B_{12} • Micro-Pen® (special coated procaine penicillin G)

ELANCO PRODUCTS COMPANY • A DIVISION OF ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA

Convention Calendar

April 23-28—School of Executive Development in Business Management, Unit I; Continuing Education Center, University of Georgia, Athens; sec., Harold E. Ford, Southeastern Poultry & Egg Assn., 235 E. Ponce de Leon Ave., Decatur, Ga.

April 23-28—Grain Elevator & Processing Superintendents; Baker Hotel, Hutchinson, Kansas; sec., Dean M. Clark, 1115 Board of Trade, Chicago 4, Ill.

April 24-26—Animal Health Institute; Mayflower Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines, Iowa.

April 27-29—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson.

April 28—Beef Cattle Day; Washington State University, Pullman; Dr. Irwin Dyer, Animal Science Dept.

April 28—Indiana Cattle Feeders Day; Purdue University, Lafayette, Ind.; chm., Dr. W. M. Beeson, animal science department.

May 4-6—Panhandle Grain & Feed Assn.; Herring Hotel, Amarillo, Texas.

May 5—Broiler Short Course and Chicken-of-Tomorrow Day; University of Georgia, Athens; Dewey McNiece, Extension Poultry Dept.

May 7-10—American Feed Manufacturers Assn. Convention and National Feed Show; Conrad Hilton Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4.

May 7-10—Association of American Feed Control Officials; Hamilton Hotel, Chicago; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

May 14-16—National Cottonseed Products Assn.; Eden Roc Hotel, Miami Beach, Fla.; sec., John F. Moloney, 43 N. Cleveland St., Memphis 4.

May 14-15—Missouri Grain & Feed Assn.; Hotel Coronado, St. Louis, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

May 22—Des Moines Feed Club Field Day; Des Moines Golf and Country Club, Des Moines, Iowa; (hotel reservations) Reed Merrick, Sargent Calcium Co., 2525 Euclid Ave.; (tickets for banquet and show) Don Frantz, Nixon and Co., S.E. 21st and Maury.

May 22-23—Poultry Industry Sales Clinic; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

May 26—Oregon Beef Cattle Day; Oregon State University, Corvallis; chm., Dr. A. T. Ralston, Animal Husbandry Dept.

June 1-2—Arizona Ranch School and Cattle Feeders Day; University of Arizona, Tucson; Dr. Bruce R. Taylor, head, Animal Science Dept.

June 4-6—Indiana Grain & Feed Dealers Assn.; French Lick-Sheraton Hotel, French Lick, Ind.; sec., Fred K. Sale, 600 Board of Trade Building, Indianapolis 4.

June 5-7—Association of Southern Feed, Fertilizer and Pesticide Control Officials; Lafayette Hotel, Lexington, Ky.; sec., M. B. Rowe, 203 N. Governor St., Room 304, Richmond 19, Va.

June 8-11—Canadian Feed Manufacturers Assn.; National Convention; Manoir Richelieu, Murray Bay, Quebec; national secretary, W. N. Hendrick, 2901 Bloor St. W., Toronto 18, Ont.; for registrations, T. G. Sevigny, Room 100, 355 McGill St., Montreal 1, Quebec.

June 9-10—Arkansas Poultry Festival; Little Rock; mgr., Arkansas Poultry Federation, John Haid, P.O. Box 1446, Little Rock.

June 11-14—American Dairy Science Assn.; University of Wisconsin, Madison; chm., Dr. L. H. Schultz, dairy husbandman, University of Wisconsin.

June 12-13—Eastern Federation of

April 25-26—Poultry Sales and Service Short Course; Pennsylvania State University, University Park; chm., Dr. A. J. G. Maw, Head, Poultry Husbandry Dept.

May 31—Iowa Cattle Feeders Day; Iowa State University, Ames; Dr. Wise Burroughs, Animal Husbandry Dept.

Sept. 18-19—Pet Food Institute; Drake Hotel, Chicago, Ill.; sec., Clyde Kassens, 333 N. Michigan Ave., Chicago 1.

1962

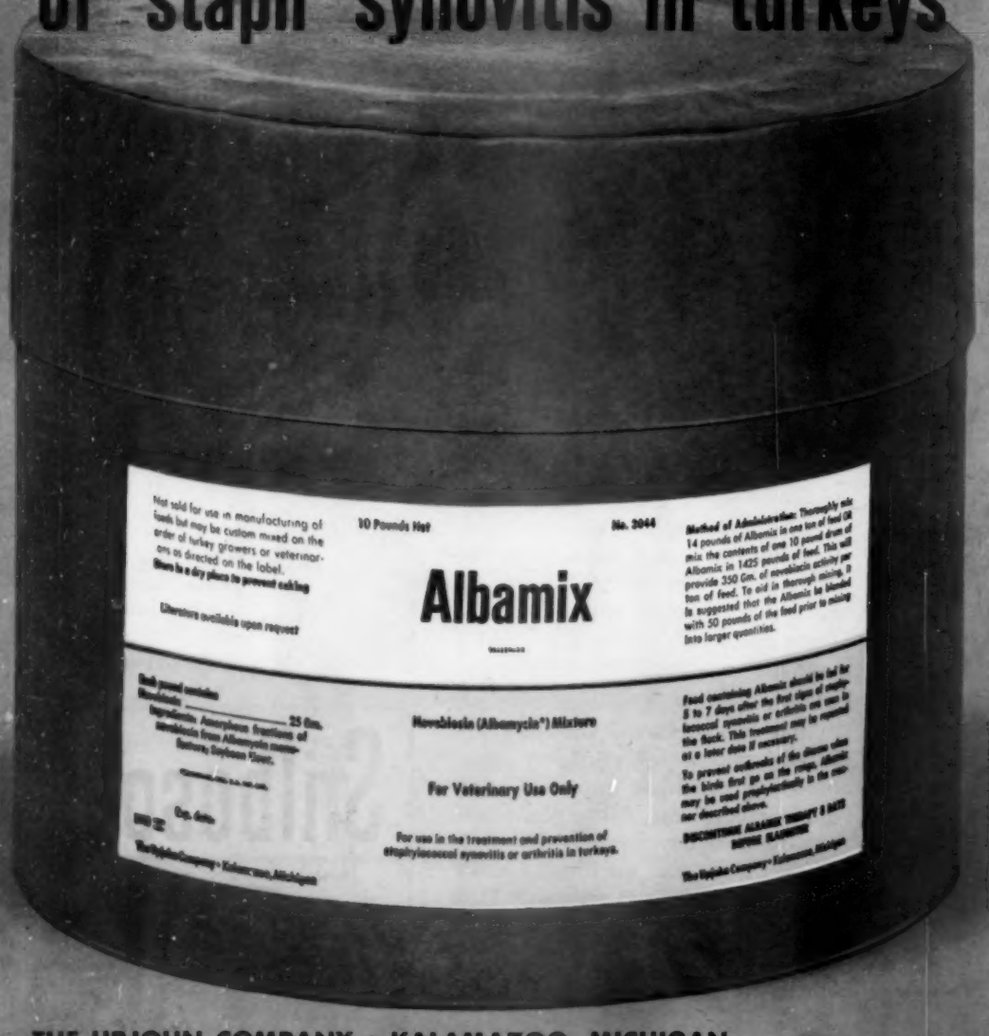
April 9-10—National Institute of Animal Agriculture; Purdue University, Lafayette, Ind.; sec., Karl D. Butler, P.O. Box 521, First National Bank Bldg., Ithaca, N.Y.

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the columns in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

NEW PRODUCT ANNOUNCEMENT

Albamix* (novobiocin)
for treatment and prevention
of "staph" synovitis in turkeys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No. 3044
Albamix
Novobiocin (Albamycin*) Mixture
For Veterinary Use Only
For use in the treatment and prevention of staphylococcal synovitis or arthritis in turkeys.

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★ DEALER TRAINING

Experienced Smith-Douglass personnel train Smith-Douglass dealers to increase tonnage and make more profit.

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Smith-Douglass pioneered the production of pelleted fertilizer and particularly that produced by the ammonium phosphate process. Continuous research provides the high quality fertilizer Smith-Douglass customers expect.

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Carefully planned advertising keeps Smith-Douglass before customers. In each Smith-Douglass ad, you'll find material designed to help the farmer, plus sell fertilizer.

★ LOCAL PROMOTIONS

Help with local promotions . . . farmer meetings . . . open houses . . . advertising displays . . . soil testing assistance and fertilizer recommendations . . . dealer aids and advertising specialties.

★ CONVENIENT LOCATIONS

Smith-Douglass plants are conveniently located for prompt shipment and delivery of fertilizer when needed.

★ REPUTATION

For 40 years, Smith-Douglass has built and maintained a reputation for integrity and quality in fertilizer . . . providing farmers the service and dependability they want.

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June 13-16—Northeastern Poultry Producers Council Egg Quality School; Pennsylvania State University, University Park, Pa.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

June 15-16—Pacific Northwest Grain Dealers Assn.; Davenport Hotel, Spokane, Wash.; sec., Merrill Sather, 418 Peyton Bldg., Spokane 1.

June 15-17—Delmarva Chicken Festival; Harrington, Del.; Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown, Del.

June 19—Connecticut Poultry Day Program and Exhibit; University of Connecticut; William A. Aho, Extension Poultryman.

June 19-21—American Association of Feed Microscopists Annual Meeting; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

June 19-24—Feed Microscopy Short Course, sponsored by American Association of Feed Microscopists; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

June 20-21—Alabama Poultry Industry Assn.; Whitley Hotel, Montgomery, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

June 29-30—Pennsylvania Poultry Federation; Pennsylvania State University, University Park; (room reservations) Russell Murphy; (program information) Glen O. Bressler, Room 105, Weaver Hall.

July 14-18—Georgia Feed Assn.; Grand Bahama Club, Grand Bahama Island; sec., W. E. Merritt, Suite 1-A, 361 E. Paces Ferry Rd. N.E., Atlanta 5.

CALENDAR FOR 1961-62

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July 18-20—American Poultry Congress & Exposition; Municipal Auditorium, Minneapolis; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

July 24-28—Southeastern Egg Quality and Grading School; Auburn University, Auburn, Ala.; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

July 27—Technical Alfalfa Conference; co-sponsored by the American Dehydrators Assn. and USDA Western Utilization Research and Development Division; Western Regional Research Laboratory, USDA, Albany, Cal.; chm., Dr. G. O. Kohler, Chief, Division Field Crops Laboratory, Western Regional Research Laboratory, 800 Buchanan St., Albany 10.

Aug. 2-4—West Virginia Poultry Assn. Convention and Festival; Moorefield, W.Va.; sec., Wilson Smith, Petersburg.

Aug. 3-4—National Soybean Processors Assn.; Edgewater Beach Hotel, Chicago, Ill.; sec., Wm. K. Self, 3818 Board of Trade Bldg., Chicago 4, Ill.

Aug. 7-9—Southeastern Management Roundtable; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce De Leon Ave., Decatur, Ga.

Aug. 7-12—Texas Feed Microscopy Short Course; Memorial Student Center, Texas A&M College, College Station; E. E. Brown, Station Microscopist.

Aug. 9—Science at Work, Open House and Reports by Staff Scientists; Connecticut Experiment Station, Lockwood Farm, Mt. Carmel, Conn.

Aug. 13-18—School of Executive Development in Business Management, Unit II; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Aug. 21-22—Kentucky Feed & Grain Association; Brown-Suburban Hotel, Louisville, Ky.; sec., Jack Weber, Box 425, Lexington.

"Our BROWER MIXER has been on the job for 7 years with NO maintenance expense."
R. F. Mette
Mette Feed Mill, Palmyra, Missouri

BROWER "Whirlwind" mixing paddle at top WHIRLS ingredients for thorough, even mixture.

All-steel grill floor over hopper. You can easily and quickly remove all feed remaining at bottom of conveyor sleeve.

"Although our Brower Mixer has blended many thousands of tons of feed since we bought it seven years ago, no maintenance expense has been required. Using the Mixer to blend our own brand of feed and to do custom mixing, we have increased our profits 50%. To handle our increased business, we bought another Brower Mixer about a year ago and now use both units."

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Exclusive Brower action WHIRLS the ingredients instead of just stirring or tumbling them . . . produces the most thorough mix you can get. Every sack has the same even mixture. Dependability, fast mixing action, and low cost operation make Brower the World's Largest Selling Mixer!

FAST and ECONOMICAL — a perfect blend in about 10 minutes at a power cost of only 3¢ to 5¢ a ton. Five sizes — 700, 1200, 2000, 3000 and 4000 pounds-per-batch mixing capacities. Above-floor and below-floor models. Heavy, welded construction — built for years of trouble-free service.

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Aug. 24-26—North Carolina Feed Manufacturers Assn.; Cavalier Hotel, Virginia Beach, Va.; sec. McNair Evans, Box 428, Laurinburg, N.C.

Aug. 24-27—Georgia Poultry Institute; Rock Eagle 4-H Club Center, Eatonton, Ga.; Dewey McNiece, Extension Poultry Dept., University of Georgia, Athens.

Aug. 28-29—American Soybean Assn.; Claypool Hotel, Indianapolis, Ind.; Geo. M. Strayer, Hudson, Iowa.

Sept. 11-12 — Minnesota Nutrition Conference; Institute of Agriculture, University of Minnesota, St. Paul; chm., Dr. L. E. Hanson, Animal Husbandry Dept.

Sept. 11-13—Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc., pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 13-14—Maryland Feed Service Conference; Chemistry Auditorium, University of Maryland, College Park; Wade H. Rice, Poultry Dept.

Sept. 19-21—Marketing Seminar for Feed Manufacturers; Morrison Hotel, Chicago; Sales Executives Council, American Feed Manufacturers Assn., W. E. Glennon, president, 53 W. Jackson Blvd., Chicago.

Sept. 19-27—International Conference on Fish in Nutrition; Washington, D.C.; sec., Dr. Erik Heen, Chief, Fisheries Technology Branch, Food and Agriculture Organization, Washington 25.

Sept. 24-26—Southeastern Feed Production School; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 Ponce De Leon Ave., Decatur, Ga.

Sept. 27-29—National Feed Ingredients Assn.; Lake Lawn Lodge, Delavan, Wis.; sec., I. Levin, 517½ E. Locust St., Des Moines 9, Iowa.

Sept. 27-29—Pennsylvania Millers & Feed Dealers Assn.; Hotel Hershey, Hershey, Pa.; sec., D. W. Parice, P.O. Box 329, Ephrata, Pa.

Sept. 28-29 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; Dr. E. L. Stephenson, animal industry and veterinary science department.

Oct. 2-3—Washington Poultrymen's Institute; Centralia Junior College; Dr. Leo Jensen, Poultry Science Dept., Washington State University, Pullman.

Oct. 3-5—Northeastern Poultry Producers Council Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

Oct. 4-6—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Poultry Science Dept.

Oct. 10-11—Iowa Poultry Convention; Veteran Memorial Auditorium, Des Moines; sec., Iowa Poultry Assn., LeRoy Kruskop, 535 E. Lincoln Way, Ames, Iowa.

Oct. 15-20—School of Executive Development in Business Management, Unit III; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 Ponce De Leon Ave., Decatur, Ga.

Oct. 23-25 — Centennial Nutrition Conference; Hotel Muehlebach, Kansas City 5, Mo.; sponsored by Midwest Feed Manufacturers Assn. and Land-Grant Colleges in Midwest's area; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Oct. 24-25—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19.

Oct. 26-28—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

Nov. 1—Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Dr. Philip Derse, Wisconsin Alumni Research Foundation, 506 Walnut St., Madison 5, Wis.

Nov. 1-2—Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 1-3—Cornell Nutrition Conference; Statler Hilton Hotel, Buffalo, N.Y.; chm., Prof. Douglas E. Hogue, Animal Husbandry Dept., Wing Hall, Cornell University, Ithaca, N.Y.

Nov. 8-9—Illinois Feed Assn.-Illi-

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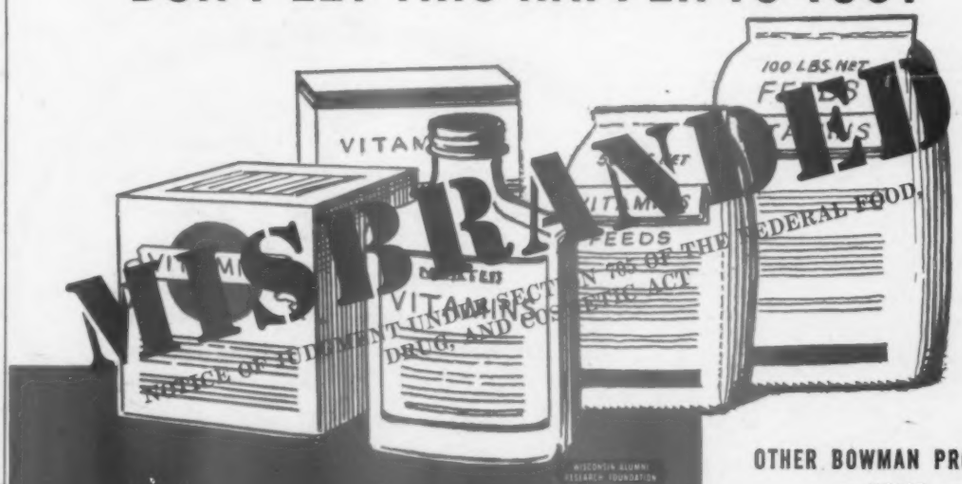
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100 LBS. NET
FEEDS
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Approved for VITAMIN D upon periodic tests

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13160 Ortley Place, Van Nuys, California
600 South Michigan, Chicago 5, Illinois

CHARLES BOWMAN & CO.

220 East 42nd St., New York 17, N. Y.

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W-W ROLLER MILLS
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Largest Dealers in Southwest

MID-CONTINENT GRAIN CO.

Board of Trade Victor 2-4671
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MEAT MEAL
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AND 44 OTHER FEEDS

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nois Poultry and Hatchery Federation joint convention; Springfield Armory, Springfield; sec. I.F.A., Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec. I.P.H.F., Aubrey Harless, Shelbyville, Ill.

Dec. 6-7 — Missouri Poultry and American Poultry & Hatchery Federation Midwest Quickie Convention; Hotel Continental, Kansas City, Mo.; sec., Missouri Poultry Improvement Assn., E. M. Funk, Box 568, Columbia, Mo.

Dec. 7-8—Michigan Feed and Grain Dealers Assn.; Pantland Hotel, Grand Rapids, Mich.; sec., Nevels Pearson, Box 472, East Lansing.

1962

Jan. 29-31—Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Feb. 4-6—Wyoming Grain, Feed & Seed Dealers Assn.; Townsend Hotel, Casper, Wyo.; sec., Everett L. Berry, Box 118, Sheridan, Wyo.

Feb. 5-7—Association of Southern Agricultural Workers; Jacksonville, Fla.

Feb. 9-11—Poultry Fact Finding Conference; sponsored by Institute of American Poultry Industries; Municipal Auditorium, Kansas City, Mo.; pres., Harold M. Williams, 67 E. Madison, Chicago 2, Ill.

Feb. 14-15—Pacific Northwest Feed Mill Production School; Benjamin Franklin Hotel, Seattle; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 16 — Washington State Feed Assn., annual convention; Benjamin Franklin Hotel, Seattle; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 20-21—Virginia State Feed Convention and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; sec., Virginia State Feed Assn., J. Paul Williams, 615 E. Franklin St., Richmond 19, or Prof. Paul M. Reaves, Dairy Science Dept., Virginia Polytechnic Institute, Blacksburg.

Aug. 13-18—12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

Japanese Visitors Tour Nutrena Farm

MINNEAPOLIS — Production systems for livestock and poultry were the center of keen interest for a six-man Japanese feed grain mission which toured the Cargill-Nutrena Research Farm at Elk River, Minn.

The group, on a month-long swing through the U.S., spent an afternoon looking over the experimental facilities at the farm and getting answers to questions from Dr. Cloy Knodt, research farm director.

Dr. Knodt explained to the group that research at the farm not only includes feeds and feeding programs, but also buildings and equipment, management methods and marketing of end products. Farmers, he said, need help in such things as choosing strains of poultry, vaccination and other health measures. Thus, a "systems research" concept governs experimental activities at the farm.

Controlled Lighting

The visitors were shown flocks of layers on controlled lighting tests ("stimulating"), which Dr. Knodt said have shown increased profits of [illegible] per bird annually. They also were told of outstanding results obtained by the Coccivac vaccination method of combatting coccidiosis. Some 41,000 birds have been vaccinated at the farm, and none have shown coccidiosis symptoms in up to 24 months time, Dr. Knodt said. Before the vaccination program was started, extensive losses from the disease had occurred at the farm.

The visitors showed considerable interest in this information on coccidiosis [illegible] Japan.

The tour also included inspection of the Pigloo system for swine in which sows are placed in isolation in individual huts before farrowing. Comparisons with central farrowing systems, also at the farm, show that the Pigloo method reduces diseases, losses and labor costs, Dr. Knodt said.

Sponsored by the U.S. Feed Grains Council, the U.S. tour helped acquaint the Japanese agricultural leaders with grain production and marketing, feed manufacturing, nutrition and disease research and feeding in several stops across the country.

They also were told of outstanding results obtained by the Coccivac vaccination method of combatting coccidiosis. Some 41,000 birds have been vaccinated at the farm, and none have shown coccidiosis symptoms in up to 24 months time, Dr. Knodt said. Before the vaccination program was started, extensive losses from the disease had occurred at the farm.

The CocciVac® program works for Nutrena

It can work for you

See your Sterwin representative or call, wire or write us for the facts.

NEW!

Single drop applicator for oral vaccination with COCCIVAC provides easy method for safe, sure, lasting protection from coxy. Free sample applicator on request.

(THIS ARTICLE APPEARED IN FEEDSTUFFS, OCT. 29, 1960)
Nutrena Mills Inc. has used and recommended the COCCIVAC—Trithiadol® program since 1958.

COCCIVAC *Type 4 is available for broilers. Types A and B for layers and roasters—and for broilers in heavy exposure areas.*

Dorn and Mitchell
LABORATORIES, INC.
SUBSIDIARY OF STERLING DRUG INC.
Opelika, Alabama

COCCIVAC IS ALSO SOLD BY
Sterwin Chemicals Inc.
Animal Health Division
1450 Broadway, New York 18, N. Y.

Number of Canadian Hogs Off from 1960

OTTAWA—A March 1 hog survey shows that the number of hogs on farms in Canada, not including Newfoundland, was about 5,255,000, some 66,000 less than March 1, 1960, according to a report from the Dominion Bureau of Statistics.

An increase of 3% in the eastern part of Canada was offset by a decrease of 6% in the western part of the country.

The report said that with increased farrowings during the winter quarter there were more pigs under six months old on hand in both sections of the country, but the number of those six months old or over decreased 6 and 17% respectively in these areas. More sows and gilts are being kept for breeding than last year and this retention coupled with lower inventories than last year at the beginning of the quarter has been reflected in decreased marketings, the report indicated. This situation is expected to change after midsummer when marketings should exceed those of last year.

The number of sows that farrowed during the December-February period is estimated at 256,500, up 13% from the 227,000 during the corresponding period a year earlier, the bureau said. The bureau commented that this increase is more moderate than the 22% increase forecast for this quarter on the basis of intentions reported in the survey Dec. 1.

However, said the agency, it appears that part of the projected increase is merely delayed. According to intentions reported by farmers March 1, farrowings during the spring quarter may be 26% greater than last year with increase of 18 and 34% in eastern and western Canada respectively.

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Plans for Canadian Feed Convention Program Set

POINTE - AU - PIC, QUEBEC — "Feeding Through Science" will be the theme of the June 8-10 convention of the eastern division of the Canadian Feed Manufacturers Assn. here. The convention will be held at the Manoir Richelieu.

The convention announcement stated that the program will cover applied nutrition, feed marketing and sales service.

The nutrition portion of the program, scheduled for the morning of June 9, will include: "Vitamins and Mineral Levels in Practical Feed Formulation," Dr. L. E. Lloyd, Macdonald College; "The Practical Use of Protein and Energy Values," Dr. J. K. Loosli, Cornell University, and "The Practical Application of Feed Additives," Dr. J. R. Couch, Texas A&M College.

The portion of the program on Canadian feed marketing, set for the afternoon of opening day, will include: "Potential of Canadian Feed Sales," H. Cook, Toronto Elevators; "The Sales Manager's Programme," J. de Broin, Pioneer Cafeteria Feeds, Maple Leaf Mills, and "The Role of the Modern Feed Salesman," Dean Fales, Ralston Purina Co.

On the sales service program the afternoon of June 9 are: "Measuring Your Sales Effort," J. J. Thompson, Chas. Pfizer & Co., Inc., and "The Techniques of Produce Field Services," Dr. H. Simpson, Cyanamid of Canada.

Speaking at the banquet the evening of June 9 will be Nolin Trudeau, Publicity Services Ltd.

Plan $125,000 Mill

MONTROSE, COLO.—Reorganization of the Farmers' Union Supply Co. here and construction of a $125,000 feed mill were approved by membership.

The reorganization provides for a change of the name, revision of by-laws, and an increase in capitalization to a minimum of $50,000.

Farmers, Inc., is the new name to be submitted to the secretary of state for approval. The cooperative felt a change was necessary since the firm is not associated with the Farmers Union.

Construction of a new mill to replace a structure which was destroyed by fire in 1958, to be started after the reorganization is completed, will be financed with available funds and a loan from the Wichita Bank for Cooperatives.

CAPILLARIA WORMS

EAST LANSING, MICH.—There is some evidence that capillaria worms are causing problems of reduced egg production in Michigan flocks, say Michigan State University poultry specialists.

C. A. Clark Named to Sprout, Waldron Post

MUNCH, PA.—Sprout, Waldron & Co., Inc., announces the appointment of C. A. Clark as sales engineer for southern California and Arizona.

C. A. Clark

Mr. Clark is a graduate of the University of California in mechanical engineering. His experience includes two years with Carnation Co. in the engineering department, two years as production superintendent of the Mirra-Cote Co., El Segundo, Cal.; and six and one-half years experience selling to the feed milling and process industries equipment manufactured by the Dustex Corp. of Buffalo.

WINS MORE CUSTOMERS
... MORE REPEAT SALES!

NEW
NECTARIZED
CALF-PAB

When Dairymen smell new NECTARIZED Blatchford's Calf-Pab's delicious aroma, they want to buy it. When they see how their calves go for its *extra* smackin' good whole milk flavor—they come back for more! Their calves eat better, grow better. Low cost . . . proved high quality . . . Calf-Pab gives you a high mark-up profit.

Write for Free Nectarized Display Now!

Blatchford's
ESTABLISHED IN 1900

Main Plant and Offices: Waukegan, Illinois
Midwest Plant: Des Moines, Iowa
West Coast Division: Nampa, Idaho

"The Name You Can Trust in Specialty Feeds"

WHY MORE DAFFINS
SERVE MORE FARMERS
than all other mobile mills combined!

Daffin has built its tremendous sales leadership simply because **Feedmobile owners** consistently get far more for their money—more profit from farm-customer merchandising and more economy from dependable, low-cost operation. And that's it!

As a result of owner acceptance, Daffin has accumulated far more experience in engineering, building, testing, refining and servicing mobile feed mills than any other manufacturer in the world.

Proof of Daffin profitability in owner progress reports, is convincing evidence that in mobile feed mills **it pays to invest in the best!**

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Yes, Feedmobile Owners will tell you that Daffin has a plan for **your success.** The key is to **"Decide on Daffin now."** As the years go by, you'll be mighty glad you did!

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Effect of Copper Sulfate and Other Chemotherapeutics in Growing Swine Rations

● J. A. Hawbaker, V. C. Speer, V. W. Hays and D. V. Catron, Iowa State University, Journal of Animal Science, Vol. 20, No. 1, pp. 163-167, February, 1961.

ABSTRACT

Although it has been reported previously in this column that both American and British workers have demonstrated that copper sulfate at varying levels from 100 to 250 ppm. would influence growth and feed conversion with swine, it seems wise to keep abreast of developments in this area as they are reported in the journals. One of the most complete recent reports is from Iowa in the current issue of the Journal of Animal Science (Feb., 1961). The study involves four trials using a total of 528 crossbred pigs, so that they can hardly be considered to be in the area of pilot or small scale results.

The trials were of the randomized block design and the pigs were allotted to the various treatments from outcome groups of similar weight with the restriction that littermates be distributed across treatments. All experiments were conducted in dirt lots and the pigs had free access to feed and water at all times. The basal ration used in all of the trials was as follows: Ground yellow corn, 78.55 lb.; dehulled soybean meal, 17 lb.; vitamin premix, 2 lb.; calcium carbonate, 0.55 lb.; dicalcium phosphate, 1.3 lb.; iodized salt, 0.5 lb., and trace mineral premix, 0.1 lb. In Trial 1 only, condensed fish solubles were added at the level of 2½% of the ration with corn and soybean oil meal replaced so as to maintain the level of 16% total protein in the diet.

Experiment 1—Four levels of copper sulfate (0, 0.05, 0.1 and 0.15% $CuSO_4$-$5H_2O$) were added to the basal diet and the basal ration and the ration treatments were replicated three times with eight pigs per pen. Daily gain and feed required per pound of gain were recorded for the 42 day experimental period. The regression analysis of the data revealed a significant linear regression of feed upon gain, with copper sulfate levels of 0.1% producing the maximum response for both gain and feed per pound of gain.

Experiment 2—A 2 x 2 factorial arrangement of 0 to 0.1% copper sulfate and 0.0025% 3-nitro-4-hydroxyphenylarsonic acid (3N4HPAA) treatments with three replicates of eight pigs per pen was used. The daily gain and feed data were summarized on the 42nd and 107th day of the experiment. Fecal samples were collected from 18 pigs each of the basal, 3N4HPAA and copper sulfate treatments after the pigs had been on trial for 90 days and assayed for vs. groups of organisms.

Analysis of the gains during the first 42 days of this investigation revealed a significant improvement in gain and feed conversion due to copper sulfate. However, neither the 3N4HPAA effect nor the interaction between copper sulfate and 3N4-HPAA was significant. Furthermore, the arsonic did not appear to influence fecal organisms, but the copper sulfate significantly increased the coliforms, molds and yeasts, and decreased the streptococci. Also, copper sulfate decreased the lactobacilli and total aerobes significantly. It is of particular interest to note that the copper sulfate increased the molds and yeasts in much the same manner as has been previously reported for the broad spectrum antibiotics (Pappenfort and Schnall, 1951). It is proposed by the Iowa workers that this may account for the favorable responses being produced by copper sulfate in hog diets with respect to feed conversions and daily gains.

No significant responses were noted with arsonic with respect to daily gain or feed conversion, although it was true that the feed conversion was improved somewhat by the use of this additive.

Experiment 3—Six ration treatments including (1) basal, (2) copper sulfate, (3) copper sulfate plus nystatin, (4) copper sulfate plus rimocidin, (5) copper sulfate plus phytoactin, and, (6) copper sulfate plus phytostreptin were replicated three times with eight pigs per pen. Each of the antifungal antibiotics were added at the level of 30 mg. per lb. of feed and the copper sulfate was added at 0.1% in all cases. Data were recorded for the 56 day experimental period with fecal samples assayed

(Turn to page 53)

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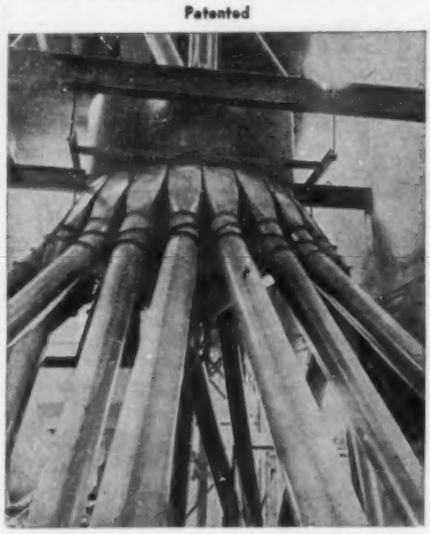

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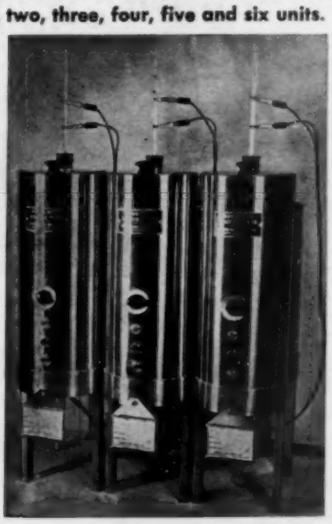

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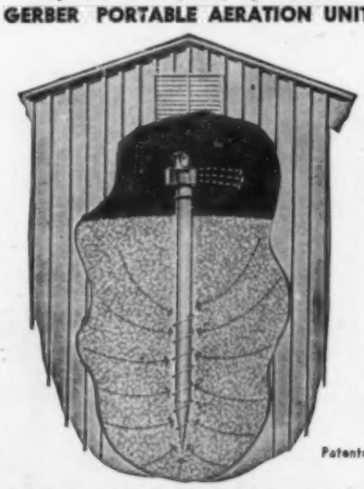

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FEED TAG CLAIMS

POULTRY

YOUR BRAND POULTRY BREEDER or STARTER FEEDS

BREEDER FEEDS

IMPROVED HATCHABILITY

As an aid in *maintaining and improving normal hatchability* where birds are suffering stress from exposure and other causes, formulate your breeder feeds to provide 50-100 grams of Terramycin* per ton of total feed intake.

IMPROVED FERTILITY

To *improve fertility*, your feeds should provide Terramycin at the rate of 50-100 grams Terramycin per ton of total feed intake.

INCREASED EGG PRODUCTION

Feeds providing 10-50 grams of Terramycin per ton of total feed intake serve as an aid in *improving egg production (chickens)*. To *improve normal egg production, extend periods of high egg production, improve egg production and feed efficiency in the presence of disease and at times of stress*, your feeds should provide 50-100 grams of Terramycin per ton of total feed intake.

IMPROVED EGGSHELL QUALITY

To *improve eggshell quality*, include in your formulation 50-100 grams of Terramycin per ton of total feed intake.

PREVENTION OR TREATMENT OF DISEASE:

See the high-level feed tag at right for approved disease claims you can make when your breeder feeds are fortified with the indicated levels of Terramycin.

STARTER FEEDS

REDUCED MORTALITY

The addition of 100 grams of Terramycin per ton of total feed intake for use during the first two weeks is effective in *reducing the early mortality* (caused by Terramycin-susceptible organisms) which is often found in baby chicks and poults.

IMPROVED LIVABILITY OF CHICKS OR POULTS

To *improve livability* of chicks or poults when losses are due to Terramycin-susceptible organisms, fortify your feeds with 50-100 grams of Terramycin per ton of total feed intake.

BETTER GAINS AND FEED EFFICIENCY

Fortify your feed so as to provide 5-7½ grams Terramycin per ton of total feed intake to *increase rate of gain and improve feed efficiency*. Feed from hatching to market.

PREVENTION OR TREATMENT OF DISEASE:

See the high-level feed tag at right for approved disease claims you can make when your starter feeds are fortified with the indicated levels of Terramycin.

YOUR BRAND LAYING FEEDS

IMPROVED EGG PRODUCTION

Terramycin* used at the rate of 10-50 grams per ton of total feed intake serves as an aid in improving *egg production* (chickens).

When used at the rate of 50-100 grams of Terramycin per ton of total feed intake, Terramycin can *improve normal egg production, extend periods of high egg production, improve egg production and feed efficiency in the presence of disease and at times of stress.*

IMPROVED EGGSHELL QUALITY

Terramycin, used at the rate of 50-100 grams per ton of total feed intake can *improve eggshell quality.*

PREVENTION OR TREATMENT OF DISEASE

Blue Comb—Terramycin at the rate of 50 grams per ton of total feed intake is an aid in the prevention of Blue Comb (also known as mud fever or non-specific enteritis). At the rate of 100 grams per ton of total feed intake, Terramycin is an aid in the *treatment of Blue Comb*. Treatment with the above level of Terramycin is usually effective within 5 days. If improvement is not noted at this time, re-examine the diagnosis.

CRD and Infectious Sinusitis—The addition of 100-150 grams of Terramycin per ton of feed has been found to be an aid in *reducing mortality* in birds which have suffered an attack of air sac (CRD). It is recommended wherever possible to feed from time of attack to marketing.

Infectious Synovitis—As an aid in the *prevention* of Infectious Synovitis add 100 grams of Terramycin per ton of complete feed intake. As an aid in the *treatment* of Infectious Synovitis add 200 grams of Terramycin per ton of complete feed intake.

Stress Setbacks—Add 50 grams of Terramycin per ton of total feed intake for use after any shock or upset such as overheating, chilling, vaccination, worming, debeaking, moving, for the *prevention of disease* from Terramycin-susceptible organisms during periods of stress. Feeding should be continued for 2-5 days following stress, depending upon condition of birds. To *minimize shock*, this feed should be used for 2-3 days prior to vaccination, worming, debeaking, moving.

Fowl Cholera—Terramycin in feed serves as an aid in *prevention* of Fowl Cholera in chickens. Provide 200 grams of Terramycin per ton of complete feed. (Feed continuously.)

Avian Infectious Hepatitis—Terramycin in feed serves as an aid in *prevention* of Avian Infectious Hepatitis in chickens. Provide 200 grams Terramycin per ton of complete feed. (Feed continuously.)

YOUR BRAND HIGH-LEVEL FEED

PREVENTION OR TREATMENT OF DISEASES:

Blue Comb—Terramycin* at the rate of 50 grams per ton of total feed intake is an aid in the *prevention of Blue Comb* (also known as mud fever or non-specific enteritis). At the rate of 100 grams per ton of total feed intake, Terramycin is an aid in the *treatment of Blue Comb*. Treatment with the above level of Terramycin is usually effective within 5 days. If improvement is not noted at this time, re-examine the diagnosis.

CRD and Infectious Sinusitis—The addition of 100-150 grams of Terramycin per ton of feed has been found to be an aid in *reducing mortality* in birds which have suffered an attack of air sac (CRD). It is recommended wherever possible to feed from time of attack to marketing.

Infectious Synovitis—As an aid in the *prevention* of Infectious Synovitis add 100 grams of Terramycin per ton of complete feed intake. As an aid in the *treatment* of Infectious Synovitis add 200 grams of Terramycin per ton of complete feed intake.

Stress Setbacks—Add 50 grams of Terramycin per ton of total feed intake for use after any shock or upset such as overheating, chilling, vaccination, worming, debeaking, moving, for the *prevention of disease* from Terramycin-susceptible organisms during periods of stress. Feeding should be continued to 2-5 days following stress, depending upon condition of birds. To *minimize shock*, this feed should be used for 2-3 days prior to vaccination, worming, debeaking, moving.

Fowl Cholera—Terramycin in feed serves as an aid in prevention of Fowl Cholera in chickens. Provide 200 grams of Terramycin per ton of complete feed. (Feed continuously.)

Avian Infectious Hepatitis—Terramycin in feed serves as an aid in *prevention* of Avian Infectious Hepatitis in chickens. Provide 200 grams Terramycin per ton of complete feed. (Feed continuously.)

Hexamitiasis—As an aid in the *prevention* of Hexamitiasis add 50 grams of Terramycin per ton of complete feed intake. As an aid in the treatment of Hexamitiasis add 100 grams of Terramycin per ton of complete feed intake.

*Whenever the word Terramycin appears hereafter it shall be understood to refer to oxytetracycline HCl activity.

FEED TAG CLAIMS

CATTLE

YOUR BRAND CALF FEEDS

BETTER GAINS AND FEED EFFICIENCY

Feeds containing 10-25 grams of Terramycin* per ton of total feed intake can *increase rate of gain and improve feed efficiency* when fed from birth to 12 weeks of age.

PREVENTION OR TREATMENT OF SCOURS

For *prevention or treatment* of Bacterial Diarrhea (Scours) add recommended levels or equivalent to furnish 0.1-5 mg. of Terramycin per pound of body weight daily.

YOUR BRAND DAIRY FEED

INCREASED MILK PRODUCTION—As an aid in increasing milk production in lactating dairy cows, formulate your feed so as to provide 75 mg. of Terramycin* per head per day. Note: When this product is used as directed, tests conducted on milk from treated animals show no residue of Terramycin.

PREVENTION OR TREATMENT OF SCOURS—Terramycin in your feeds at the recommended levels, or equivalent, to furnish 75-100 mg. of Terramycin per head daily can aid in the prevention or treatment of Bacterial Diarrhea (Scours).

LESS BLOAT—Feeds which furnish 75 mg. of Terramycin per head daily serve as an aid in reducing the incidence and severity of bloat.

YOUR BRAND BEEF FEEDS

BETTER GAINS AND FEED EFFICIENCY

To *increase rate of gain and improve feed efficiency*, fortify the finishing ration so as to provide 75 mg. of Terramycin* per head daily.

LESS BLOAT

As an aid in *reducing incidence and severity of bloat*, add Terramycin to your feeds at recommended levels so as to provide 75 mg. per head daily.

REDUCED LIVER ABSCESSES

As an aid in *reducing incidence of liver abscesses*, add Terramycin to your feeds at recommended levels to furnish 75 mg. per head daily.

PREVENTION OR TREATMENT OF SHIPPING FEVER

For *prevention* or *treatment* of the *early stages of shipping fever complex*, add recommended levels, or equivalent, to furnish 0.5-2 grams Terramycin per head daily. Terramycin treatment at these levels is effective prophylaxis when fed to cattle for 3-5 days preceding shipment or 3-5 days following arrival in feedlots. For treatment of shipping fever, these levels should be fed at the onset of the disease symptoms and continued until symptoms disappear.

CONTROL OF SCOURS

For *prevention* or *treatment* of *Bacterial Diarrhea* (Scours) add recommended levels, or equivalent, to furnish 0.1-5 mg. of Terramycin per pound of body weight daily.

SHEEP

YOUR BRAND SHEEP FEEDS

BETTER GAINS AND FEED EFFICIENCY—Terramycin* can help *increase rate of gain and improve feed efficiency* when fed during the finishing period. Feeds should be formulated so as to supply 10 to 20 grams Terramycin per ton of complete feed intake.

LESS SCOURS—Terramycin helps *prevent or treat Bacterial Diarrhea* (also known as Infectious Scours, Lamb Dysentery, White Scours of Lambs, Salmonella Dysentery, Paratyphoid Dysentery, Navel Ill and other diarrhea associated with Bacillary Infections). As an *aid in the prevention* of *Bacterial Diarrhea* feeds should be formulated to furnish 50 grams of Terramycin per ton of complete feed. As an *aid in the treatment* of *Bacterial Diarrhea*, feeds should be formulated to supply 100 grams of Terramycin per ton of complete feed intake.

REDUCED ENTEROTOXEMIA LOSSES—Terramycin aids in the *reduction of losses due to Enterotoxemia* (over-eating disease). Formulate feeds at a rate to furnish 25 mg. of Terramycin per head daily.

SWINE

YOUR BRAND SWINE FEEDS

BETTER GAINS AND FEED EFFICIENCY

Terramycin* in feeds used from birth to market can help *increase rate of gain and improve feed efficiency*. Add Terramycin at the rate of 25-50 grams per ton for pigs weighing 10-30 lbs. and 7½ to 10 grams per ton complete feed for pigs weighing 30-200 lbs.

CONTROL OF SCOURS

Terramycin in swine feeds serves as an aid in the *prevention or treatment of Bacterial Diarrhea* (also known as Infectious Enteritis, Vibrio Dysentery, Necro, Necrotic Enteritis, Salmonella Infections, Black Scours, Bloody Dysentery, Bacillary Infections associated with Virus diseases). As an aid in *prevention*, fortify feeds at the rate which supplies 50 grams Terramycin per ton of complete feed intake. As an aid in *treatment*, fortify feeds at the rate of 100 grams Terramycin per ton of complete feed intake.

ATROPHIC RHINITIS

As an aid in the *maintenance of weight gains and feed consumption* in the presence of Atrophic Rhinitis, fortify feeds at the rate which will supply 50-150 grams Terramycin per ton of complete feed intake.

REDUCE LEPTOSPIROSIS LOSSES

Terramycin in swine feeds helps *reduce instances of abortion, gives higher survival rate with healthier and heavier newborn pigs, reduces urinary shedding of leptospirae and aids in maintenance of normal weight gains and feed consumption* in the presence of porcine leptospirosis. Feeds should be fortified at the rate of 500 grams of Terramycin per ton of complete feed intake and fed for a period of 7-14 days approximately one month before farrowing.

MINK

YOUR BRAND MINK FEEDS

BIGGER PELTS—Terramycin* is an aid in *increasing the size and weight of pelts*. Feeds should provide 20 grams of Terramycin per ton of complete feed, fed continuously from weaning to pelting.

BETTER GAINS AND FEED EFFICIENCY Terramycin can help *increase rate of gain and improve feed efficiency* when fed from weaning to pelting so as to provide 20 to 50 grams Terramycin per ton of total feed intake.

CONTROL BACTERIAL DIARRHEA—Terramycin is an aid in the *prevention* of Bacterial Diarrhea when fed at a rate to furnish 50 grams of Terramycin per ton of total feed intake. When fed at a rate to furnish 100 grams of Terramycin per ton of total feed intake, Terramycin is an aid in the *treatment* of Bacterial Diarrhea.

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But under field conditions, neither the problem nor the infection is quite that simple.

The kind and number of bacteria that can cause disease or cut production varies from farm to farm. Many disease conditions, moreover, are *mixed infections* caused by many types of gram-negative or gram-positive bacteria, virus and other types of organisms.

For example, in one study of 187 field outbreaks of CRD, 15 other *primary diseases* were involved in the infection. And in another study, 18 types of *secondary organisms* were found associated with CRD outbreaks.

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from 54 pigs (nine pigs per treatment) during the third week of the trial, and again, from the same 54 pigs, during the seventh week of the experiment.

Copper sulfate again significantly improved the rate of gain and feed conversion. An improvement in rate of gain was noted only for phytostreptin of the antifungal antibiotics, and this improvement was not statistically significant. Copper sulfate decreased lactobacilli, total aerobes and total anaerobes significantly—much in the same manner as in Trial 2. Again a higher mold and yeast count was noted with the copper sulfate fed pigs—but not significantly greater. Interestingly enough, none of the so-called "antifungal antibiotics" decreased the mold and yeast counts!

Experiment 4—Six ration treatments including (1) basal, (2) oleandomycin (5 mg./lb.), (3) oxytetracycline (25 mg./lb.), (4) copper sulfate (0.1%), (5) treatments 2 plus 4, and (6) treatments 3 plus 4 were compared in an incomplete factorial arrangement of treatments with four replications of eight pigs per pen. The data were collected for a 42 day period. Fecal samples were collected from 14 pigs on each treatment during the fifth week of the experiment. Eight pigs on the basal ration and 14 pigs on the copper sulfate treatment were continued on the same rations until they averaged 125 lb. in body weight. At this time, the protein content of the ration was lowered to 12%, and six of the pigs that had been on the copper sulfate supplemented diet were placed on the basal ration. As the pigs reached market weight they were slaughtered and tissue samples from the liver and loin were analyzed for copper.

In this trial, copper sulfate did not increase gains quite as much as the two antibiotics used, although it did increase the gains significantly, at the 5% level of probability. The combination of copper sulfate and either oleandomycin or oxytetracycline in this trial appeared to give an additive effect with respect to growth rate. The feed conversion data are complicated by the fact the frozen waterers during part of the trial in certain pens confounded the data, so that no clear conclusions can be drawn in this regard.

The tissue studies for copper showed no differences in the copper content of the loin between pigs fed a ration containing 0.1% copper sulfate and those fed the control ration. However, this level of copper increased the liver copper about 10 fold (29 to 293 ppm.). Again, the copper sulfate significantly decreased the lactobacilli, total aerobes, and streptococci. Also, it decreased the anaerobes and increased the coliforms. The antibiotics, on the other hand, increased the coliforms and molds and yeasts. Oleandomycin also significantly lowered the lactobacilli, total aerobes, total anaerobes and streptococci in this trial.

COMMENT

This is one of the largest and most complete trials so far run on the effect of copper sulfate on swine of various ages. It appears that this additive has much to offer the feed industry because it is cheap and appears to give much the same responses as antibiotics, albeit, somewhat less. Since FDA clearance is not required, nor is a medicated feed tag, it offers convenience to many operators. However, good mixing is also required, as at these levels some intoxication and poisoning may occur. Florida workers have reported that amounts as little as 100-150 ppm. were toxic in their hands (1959, 1960).

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Vitamin Stability Called Relative

ST. PAUL—General rules for stability of vitamins in feed can be formulated, but may vary widely under different conditions of chemical or physical stress, William L. Benson, research associate in product development, Merck & Co., Inc., Rahway, N.J., said at a meeting of the Twin City Nutrition Seminar here.

Mr. Benson spoke to the Twin City nutritionists on the subject of "Factors Influencing Stability of Vitamins in Feeds." He said that the actual chemical or biological instability of any vitamin must be considered under a specific set of circumstances.

The Merck research man said, "All stability or instability, whichever way one wishes to consider change, is a relative thing. For example, an active ingredient in a finished feed which loses 3% of its biological activity per week under normal storage conditions should be considered only moderately unstable. The reason? Most finished feeds are consumed within a month and a 12-15% loss cannot usually be detected through measurements of animal inefficiency. On the other hand, this same degree of activity loss in a feed supplement could be considered serious since the shelf life of a supplement might be as much as four months. In this case, we are talking about a 50% loss of active ingredient before it is even mixed into a finished feed. In addition to the relativity angle, it should be clearly understood that any specific degree of instability can be greatly influenced by factors such as temperature, moisture, time, pH, pressure (pelleting), etc. The stability or instability of any active ingredient can only be expressed in numerical values under a well defined and specific set of conditions which can prove almost any degree of stability that one wishes to prove."

Mr. Benson listed three vitamins as having a high degree of stability under all kinds of feed manufacturing processes and in all kinds of feed mixtures, concentrates and supplements. They were niacin, riboflavin and vitamin E.

He commented that niacin is almost indestructible, that riboflavin is very resistant to change in any normal feed or feed concentrate and that vitamin E is considered to be one of the more stable feed additives.

Pantothenic Acid

Of pantothenic acid or calcium pantothenate, he said that the acid itself is quite unstable and is not used in commercial feeds. But, he said that it was found some years ago that the calcium salt of this acid was stable enough to be used in feeds and that there are three different types of these calcium salts for addition to feed.

He pointed out that pantothenic acid is an optically active material and that only the "d" or dextrorotatory isomer is an active vitamin. The "l" or levo form is biologically inactive, he said.

He said that the three common forms of calcium pantothenate currently on the market include: d-calcium pantothenate, dl-calcium pantothenate and dl-calcium pantothenate chloride complex. The last of these is probably more widely used in feeds than the other two combined, he commented. The reasons he gave were that it is slightly less hygroscopic and therefore somewhat more stable and it is somewhat easier to manufacture and thus in greater supply. He stated that the theoretical activity of Cal Pan CCC is about 37% of that assigned to pure d-calcium pantothenate.

Mr. Benson said it is well to remember that premixes of any calcium pantothenate salts should be made on a natural carrier such as wheat middlings. He commented that most other feedstuffs tend to possess an acid pH.

Then, Mr. Benson observed, "Up to this point, we have been on fairly safe ground, but from now on the question of degree of instability depends so much on conditions of environment that it would be foolhardy to list any stability data except under very well defined and specific conditions."

Vitamin B_{12}

Mr. Benson described vitamin B_{12} as being fairly stable in animal feeds and said that it has probably accomplished more in terms of improving health and growth of poultry and swine than any other single active ingredient.

He commented, "There are at least a dozen different molecular structures which show some degree of vitamin B_{12}-like biological and microbiological activity. At least one pseudo vitamin B_{12} exists which shows relatively high B_{12} activity when measured by LLD microbiological procedures but which shows almost negligible growth response in animals.

"This sort of evidence caused a great deal of confusion at first, but it is now generally agreed that the structure exhibited by the cobalamine type of this vitamin is probably the most efficacious form known at this time, with the possible exception of a special derivative known as cyanocobalamine.

"Cobalamine or cyanocobalamine forms of vitamin B_{12} exhibit their best degree of stability in the pH range of 4.5 to 5.0. This range is slightly more acid than the general run of feeds so a very slow decomposition might be expected. I would estimate this loss in the range of 0.5 to 1.5% per week under normal storage conditions. Otherwise, vitamin B_{12} is fairly stable in animal feeds."

Vitamin D

Although vitamin D has been known and studied longer than any of the other active ingredients, at the present time there are no recognized chemical assays for the D-vitamins in finished feeds or feed concentrates, said Mr. Benson. Consequently there is not a great mass of stability data for the D-vitamins. Most of the data which does exist is of biological origin and subject to considerable variation, he added.

Serpasil® Premix stops death of turkeys due to aortic rupture but...

He said that a sterol was isolated from ergot in 1879 and became the "ergosterol" that is known today. The Merck researcher continued, "It was a mixture of several sterols and, although it showed appreciable activity against rickets, it remained for Waddell in 1934 to demonstrate the existence of vitamins D_2 and D_3. Up to the present time, the most active form of vitamin D_2 is calciferol at 40 million units per gm.; whereas, the most active form of vitamin D_3 is 7-dehydrocholestrol. Vitamins D_2 and D_3 have approximately equal biological activity in all species except poultry. Vitamin D_3 is apparently much more available to poultry than vitamin D_2.

"In general, sterols are sluggishly active and can be inactivated by stresses such as oxydation, reduction, linkage migration and several other mechanisms. Fortunately, the D-vitamins can be stabilized by several different treatments. Probably the most reliable and least expensive treatment for stabilizing the D-vitamins (insofar as their use in feed is concerned) was developed in the Netherlands some years ago. These products are commonly used in the preparation of feed supplements which are ultimately dispersed into finished feeds. These stable forms of the two D-vitamins are sold as dry mixtures and/or absorbates in carriers of dried milk solids and oat meal flour. The products are mineral stable. More recently, individual D-vitamins or combinations of A and D vitamins have been produced in an encapsulated form. The stability of the encapsulated forms is considered to be good."

Vitamin A

Vitamin A was described by Mr. Benson as one of the most important and least stable of all the vitamins commonly used in every type of feed.

He said that for many years the normal source of vitamin A was fish liver oil. These oils were often as different as day and night. Factors such as origin, age, concentration, type of processing, etc., all affected the quality of the fish oil. It was a lucky animal that received 100% of the intended vitamin A activity.

Mr. Benson said, "During the past 10 years, fish oils have been gradually replaced by synthetic vitamin A. The struggle to get synthetic vitamin A into feed use was not easy. Fish oils were less expensive and had been in use a long time. Most of the major advances made by synthetic vitamin A have taken place during the past five years. Three major 'breaks' occurred during this period. The 'rediscovery' that vitamin A could be protected by encapsulating with gelatin, the investment of close to $20 million in production facilities by several of the pharmaceutical manufacturers and the discovery that synthetic vitamin A is of the 'all trans' variety—the isomeric form which shows the greatest biological activity in poultry and mamals as compared to an equal chemical assay value of fish oil.

"Vitamin A is active in a number of different molecular forms. Some of the better known forms are vitamin A alcohol, vitamin A aldehyde, vitamin A acetate and vitamin A palmitate. The ester forms are more stable than the alcohol or aldehyde forms and as such have been studied at considerable length. Up to the present time, vitamin A palmitate seems to be the ester of choice. Current animal availability and efficacy studies, as well as chemical stability studies, appear to favor the palmitate over the acetate form.

"The physical factors which tend to inactivate vitamin A are: Temperature, time and excessive acidity or alkalinity. The chemical factors are hydrolysis and oxidation. At this point, it might be appropriate to note that the physical and chemical stresses which would normally cause the rapid inactivation of vitamin A have been largely overcome by the gelatin encapsulation process."

Vitamin K

Vitamin K activity is similar to vitamin A in that a number of different molecular structures with different degrees of biological activity can exist, Mr. Benson noted. "Up to the present time, some seven different active forms, vitamins K_1 through K_7, are listed in the literature," he said. "Although all of these active forms of vitamin K have been characterized, the actual requirements for vitamin K in animal feed are far from being clearly defined. At present, vitamin K is added to poultry feed as a form of insurance rather than on the basis of any definitely known requirement. It appears to do some good in the prevention of hemorrhagic syndrome and in the prevention of the formation of blood spots in eggs. Two commercial forms of this vitamin are or have been used in feeds, menadione and menadione sodium bisulfite.

"Vitamin K is probably one of the least stable vitamins currently used in poultry feeds. Relatively little is known of its true stability. However, limited data is available on its stability in premixes and supplements. For example, menadione is quite stable in mineral carriers such as calcium carbonate and oyster shell meal, but it is relatively unstable in grain base carriers. Conversely, menadione sodium bisulfite is relatively unstable in mineral carriers, but moderately stable in grain base carriers."

Vitamin C

On vitamin C, Mr. Benson said, "This vitamin, although known to be important in human nutrition since the early days of the British Navy, has not found too much use in animal feeds. Recent work with laying hens indicates that vitamin C may improve the quality of egg shells during the stress of heavy laying, particularly in hot weather. Also, there are some indications that vitamin C might have some beneficial effects in preventing hemorrhagic syndrome in poultry and in maintaining the general 'well being' of fur bearing animals. Vitamin C is currently used in rat and simian diets.

"Vitamin C is moderately stable in mash type feeds, but is almost totally and immediately destroyed if mixed into mash and then formed into pellets by means of commercial pelleting machines. Vitamin C is sensitive to the increased temperature and moisture conditions encountered during pelleting. Vitamin C is very soluble in water and in the presence of only a trace of soluble metal, such as copper, will undergo rapid oxidation. The oxidation product(s) obtained as a result of pelleting are believed to be devoid of vitamin activity."

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BEST GROUP—The best group, the 1960 birds on a 1960 ration, is shown above. These birds weighed 2.82 lb. each at the end of the eight week period. They required 2.15 lb. of feed to produce 1 lb. of meat.

LOW EFFICIENCY — This group consists of 1960 chicks on a 1930 ration. This group weighed an average of 1.27 lb. each at the end of eight weeks. It took 4.29 lb. of feed to produce 1 lb. of meat.

SECOND BEST — When a 1960 ration was used with 1930 chicks the result was 1.87 lb. per bird at the end of eight weeks. This group required 2.20 lb. of feed to produce 1 lb. of meat, second best in that category.

WEIGHED LESS—The above group consisted of 1930 chicks on a 1930 ration. This group averaged .85 lb. per bird at the end of eight weeks. It took 3.91 lb. of feed to make 1 lb. of meat with this group.

Auburn Test Compares Roles Of Poultry Feeding, Breeding

By E. L. McGRAW
Auburn University

AUBURN, ALA.—What has been the major factor in increasing poultry efficiency during the past 30 years, feeding or breeding?

To find the answer to this question Dr. Claude H. Moore, head, poultry department, Auburn University Agricultural Experiment Station, and Dr. G. J. Cottier, poultry husbandman, ran a test comparing 1930 and 1960 types of chicks on 1930 and 1960 types of rations.

Four groups of day-old chicks with 125 in each group were used. The test was begun Aug. 19, 1960, and continued for eight weeks. The 1960 chicks were a Vantress White Rock cross and the 1930 chicks were of a regular farm mixture prevalent in that period. Dr. Moore was responsible for the breeding phase of the test and Dr. Cottier, the feeding.

The 1930 ration consisted of 500 lb. of yellow corn meal, 150 lb. wheat shorts, 150 lb. wheat bran, 150 lb. dried buttermilk, 40 lb. of bone meal and 10 lb. of salt. Vitamin D was added to the ration. This ration had a protein content between 14 and 15%. The 1960 ration was a commercial ration bought on the open market. The protein content was 23-24%. The 1930 ration did not contain a coccidiostat but the 1960 ration did.

The mortality rate was much higher in the groups fed the 1930 ration, the study showed. The chicks had a small outbreak of coccidiosis, and a few birds developed vitamin A deficiency and perosis. Each group was kept in a regular 12 by 14 ft. chicken house and heated with heat lamps.

Results of the eight week tests showed the following:

Ration	Chicken	Weight	Feed Efficiency
1930	1930	.85	3.91
1930	1960	1.27	4.29
1960	1930	1.87	2.20
1960	1960	2.82	2.15

These results show that when using a 1960 ration on 1930 birds the increase was 1.02 lb. over the 1930 birds fed 1930 ration. The use of 1960 birds on 1930 ration increased the weight only .42 lb. per bird over the 1930 birds fed 1930 ration. A combination of 1960 ration and 1960 birds gave an increase of 1.97 lb. per bird. These results show that to get maximum gains breeding and feeding both play important roles, the scientists say.

$100,000 BLAZE

PORTALES, N.M.—Fire destroyed a grain elevator and its contents here. Jay Slone, the owner, estimated the loss at more than $100,000, including seed and feed worth about $85,000. Cause of the early-morning fire was not determined.

Broiler Short Course Planned for May 5 at University of Georgia

ATHENS, GA.—Plans for a broiler short course and "Chicken-of-Tomorrow Day" have been announced by the poultry division, University of Georgia, Athens.

To be held May 5 at the Georgia Center for Continuing Education, University of Georgia, the one-day event will get underway with registration at 8:15 a.m., and the welcome will be given by W. A. Sutton, director, agricultural extension service, Dewey McNiece, acting head, extension service, University of Georgia, will preside over the day's festivities.

Morning speakers and their topics, all from the University of Georgia, include Richard Noles, poultry management specialist, who will discuss "The Economics of Insulating Poultry Houses"; W. E. Hudson, department of agricultural engineering, "Fundamentals of Insulation," and Dr. Robert Brown, department of agricultural engineering, who will speak on "Methods and Costs of Constructing and Remodeling Poultry Houses."

In the afternoon poultrymen will hear from Dr. Paul Sturkie, poultry husbandry, Rutgers University, whose talk is entitled "Physiology of Respiration." "Beating the Heat" will be discussed by Clarence Fisher, broiler coordinator, Athens (Ga.) Poultry Co., and Dr. J. Clyde Driggers, chairman, poultry division, University of Georgia, will conduct a summary and question session of the day's presentations.

An evening program will feature Louis Carmen, chairman, Chick-N-Que committee, poultry science club, University of Georgia, who will speak on "Chicken-of-Tomorrow Chick-N-Que."

A poultry princess will also be crowned at the evening program and winners of the Chicken-of-Tomorrow contest will be announced.

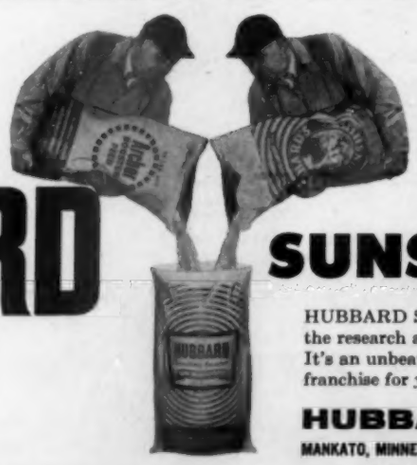
Hornco Feeds Names New Service Manager

YORK, PA.—Appointment of John Munro to the newly created position of poultry service manager for D. E. Horn & Co., Inc., here has been announced by the firm.

John Munro

The company said that Mr. Munro will be responsible for upgrading and coordinating all activities associated with the firm's grow-out poultry operation. He will also be associated with the firm's advertising program.

Mr. Munro spent several years with the U.S. Department of Agriculture working in Pennsylvania, Mississippi, Virginia, New York, Arkansas and Texas. For the last five years he has been a serviceman for A. W. Perdue & Sons, Salisbury, Md.



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Cattlemen Warned Of Plan's 'Dangers'

BRAWLEY, CAL.—The new feed-grain law holds mixed benefits and difficulties for beef cattle raisers and feeders, the executive vice president of the American National Cattlemen's Assn., Denver, declared here this week.

C. W. McMillan warned members of the California Cattle Feeders Assn. that "short-term benefits of cheaper feed easily could be offset by long-range dangers to cattle industry stability and fundamental liberties."

Mr. McMillan said the new law offers higher government price props on corn, grain sorghums and other animal feeds in "exchange for stricter regimentation than American farmers have ever known.

"Although it is advertised as voluntary, certain sections of the law provide for possible manipulation of grain prices by federal officials thus making it difficult for any grain farmer to remain aloof," he said.

Granting that the program might reduce current surpluses or cut down the storage of the 1961 crop, Mr. McMillan said the program's greatest danger was that such an "emergency" measure could easily become permanent.

"The law gives federal tinkerers new weapons to whip into line even those farmers who prefer to operate their farms in the ways best suited to the land," he said. "This appears to be an opening wedge in a scheme to develop a 'planned economy' in which farming will be done by permit, not by skill, determination and faith."

Mr. McMillan called for a "return to the free-market approach in solving farm problems," such as has proved successful for the complex beef cattle industry.

$95,000 EXPANSION

NEW CARLISLE, OHIO—Ellis Brubaker, general manager of the Brubaker Grain Elevators in New Carlisle, has disclosed that plans are underway to make a $95,000 expansion. Mr. Brubaker says that the new addition will be to the larger of the two present elevators, adding 200,000 bu. to the storage capacity of the 600,000 bu. elevator.

Egg Quality Rules

SALT LAKE CITY, UTAH—Only six retail outlet representatives appeared at a public hearing in the state capitol here to protest proposed regulations aimed to insure better quality eggs for consumers.

Protests were limited to a proposal which would bar sale of ungraded eggs, except directly at the farm.

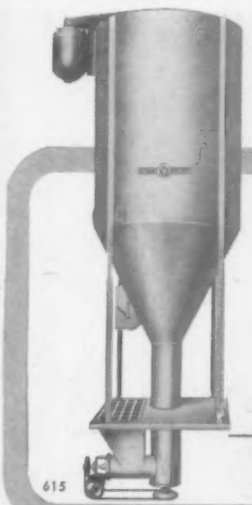
George Q. Spencer, chairman of the Utah State Board of Agriculture, said the board's proposed regulations will be given further study before they are made mandatory.

He said regulations are being drafted to insure the following:

Outlets must provide ventilated refrigeration for eggs to keep them at temperatures no higher than 60°.

Inventories must be controlled to prevent keeping eggs too long.

All eggs offered for sale as loose, or uncartoned eggs must be accompanied by a prominent sign indicating their proper grade and quality.



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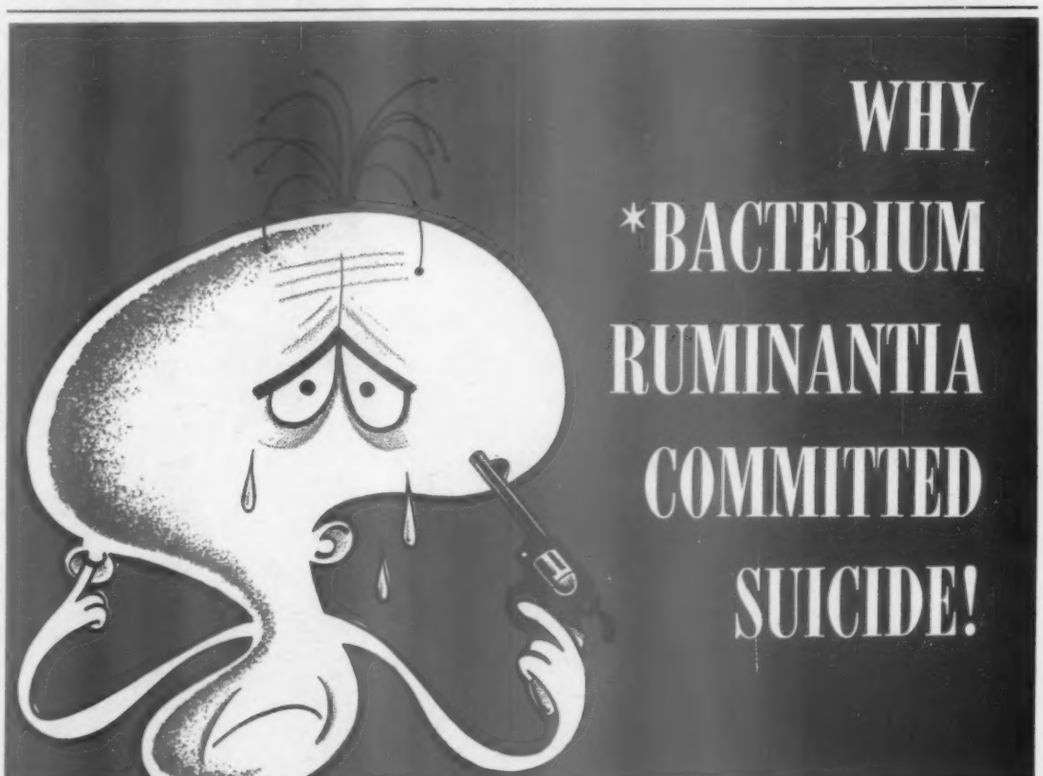

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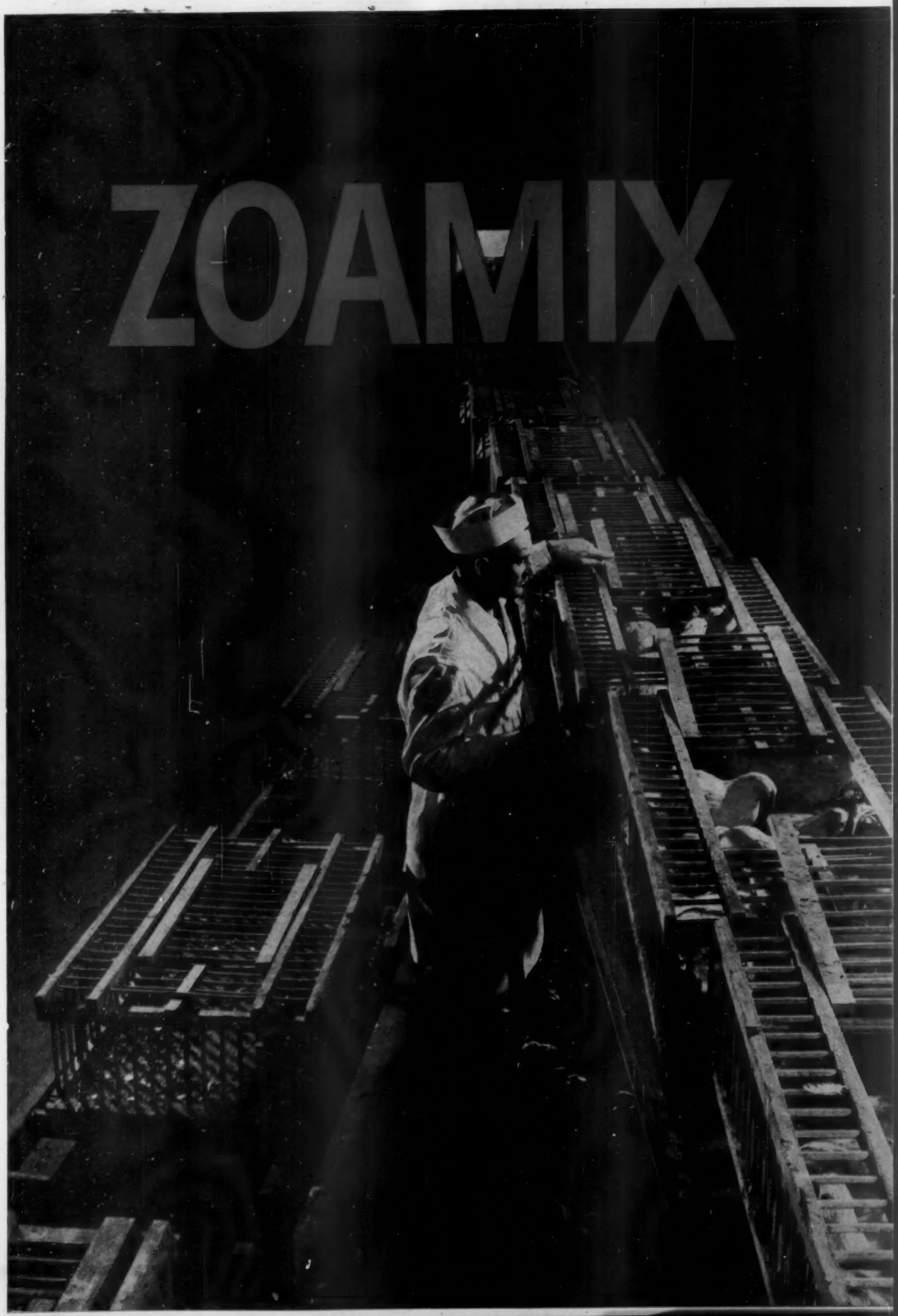
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Free educational film. "Chemicals: Vital to Our Food Supply," a 22-minute sound and color story of the contributions of chemicals to mankind, is now available for screening or group showings. Film has many references to the poultry industry. For bookings, contact your Dow Feed Industry sales representative.

1-Minute test for Zoamix. Simple test enables serviceman to make on-the-farm or in-the-plant check for presence of our coccidiostat in feed. For further information, contact your Dow sales representative.

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THE DOW CHEMICAL COMPANY DOW Midland, Michigan

UP OR DOWN

By Dr. Leonard W. Schruben, Agricultural Economist, Kansas State College

Soybean Plantings This Spring

Any report which gives you a better idea of coming events is useful. Especially is this the case for the feed manufacturer when those reports have a direct bearing on how many acres farmers plan to plant to feed grains and oilseed crops. Such reports are issued for corn, oats, barley, sorghum, soybeans and flaxseed.

This article is written to acquaint you with the report of intentions to plant a record acreage to soybeans this year. The feed grain program by the government may affect these acreages somewhat since farmers reported their intentions before the program was adopted. However, prices have been high enough to have stimulated increased plantings anyway. The effect of the program on soybean acreage likely will be of less consequence than on corn and milo acreage.

History of Intentions

Pictured for you is how nearly farmers followed their early season planting intentions. If you are going to make intelligent use of the reports for 1961 you need to have a good idea how often and how much plans were changed later in the season. Not that past history will be repeated, but it will help you gauge the confidence you can place on the estimates.

Exhibit 1 shows for several years the March prospective planting of soybeans and the estimate made the following December of acres actually planted. These data were compiled from official reports released by the Crop Reporting Board. You can compare on an acre basis changes that were made in early season intentions.

Exhibit 2 has been prepared to give you a better picture of how closely prospective plantings were realized. In general, intentions were followed fairly closely. However, during some years substantial changes were made.

Exhibit 2

Here is how to read Exhibit 2. The March prospective plantings for each year are found on the bottom scale. Then you read up until even with the actual plantings measured on the left hand scale. At this point you place a dot and write the year beside it. This is done for each year.

After the data are all located, a line is drawn that represents the general relationship. If each year fit this usual pattern, the dots all would fall on the solid line. As you can see, they don't. When the dot is above the line actual plantings exceeded March intentions to seed and vice versa.

You can review the past record by reference to the two accompanying exhibits. You should remember we are dealing with estimates. And the word estimates means just that! You will agree, I'm sure, that the past record has been a good one. Of course, many things can happen to change the picture after the estimate is made, and you are in a better position to use the estimates if you have an idea how much the picture can change.

EXHIBIT 2

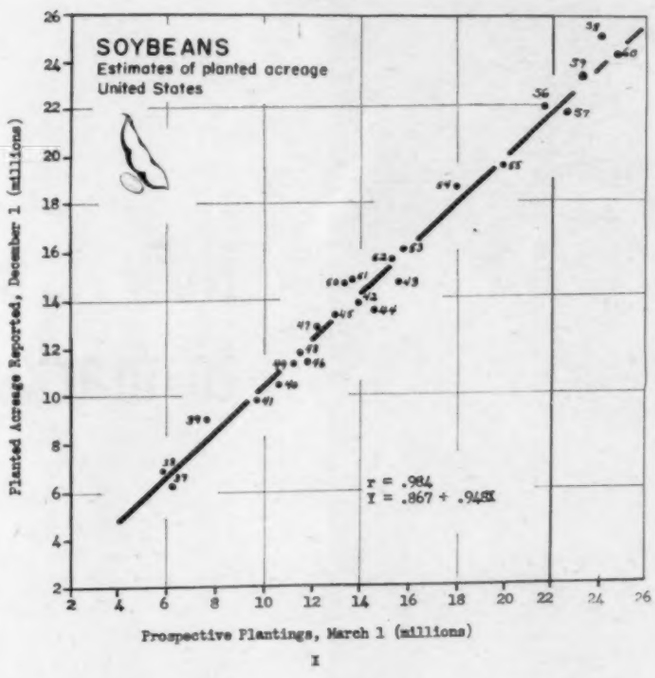

EXHIBIT 1. Soybeans, Estimates of Planted Acreages, U.S., 1937-61. (000's Omitted)

Year	Planting intentions, March report	Estimated acreage planted, December report
1937	6,300	6,139
1938	5,906	6,858
1939	7,691	9,023
1940	10,610	10,528
1941	9,788	9,996
1942	14,085	13,879
1943	15,603	14,762
1944	14,619	13,564
1945	13,236	13,412
1946	11,840	11,494
1947	12,213	12,894
1948	11,659	11,733
1949	11,278	11,409
1950	13,500	14,704
1951	13,772	14,838
1952	15,457	15,643
1953	15,862	16,085
1954	18,075	18,753
1955	19,981	19,669
1956	21,760	21,970
1957	22,745	21,804
1958	23,985	24,900
1959	23,172	23,178
1960	24,667	24,276
1961	26,426	....

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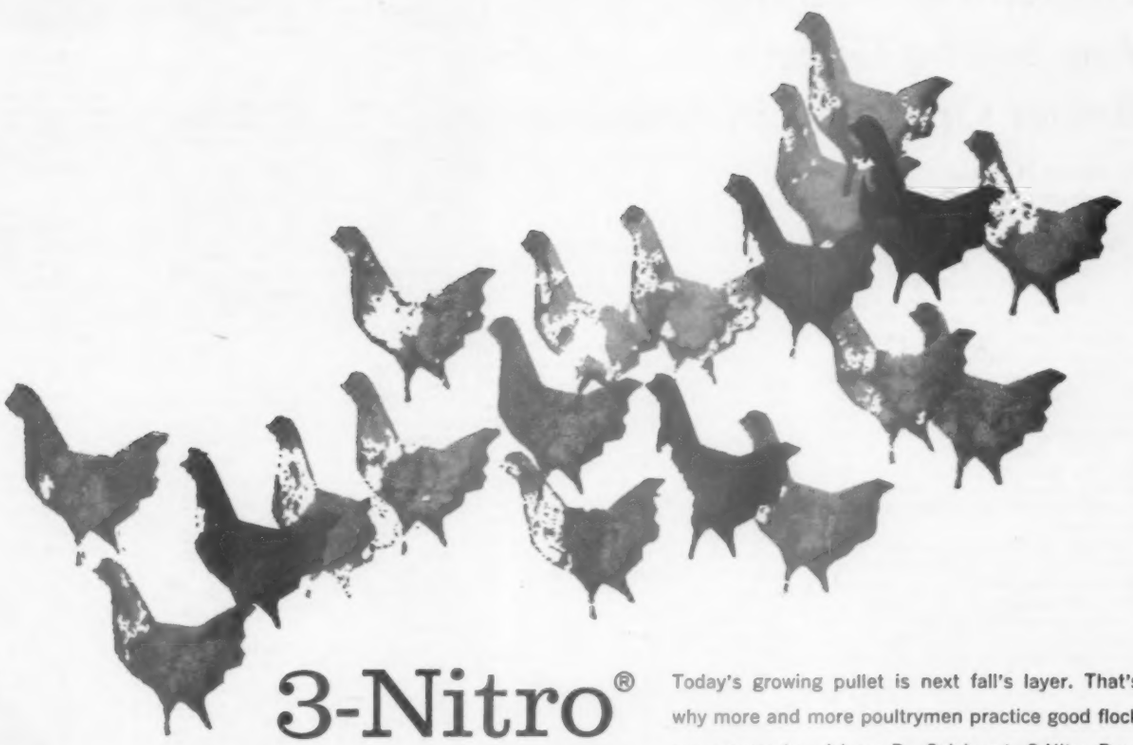

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MORE THAN PRODUCTS – A SYMBOL OF SERVICE

OUTSIDE—This is one of the 25 new environment-controlled broiler houses to be built by Jim Beasley at Athens, Ala. The windowless house is clad, roof and sides, with aluminum sheeting. The openings seen here are for installation of ventilation equipment.

Environment-Controlled Houses Are Setting Growth Records for Broiler Operation in Alabama

By Robert H. Brown
Feedstuffs Special Writer

Broilers that normally require the conventional nine weeks to reach market weight are coming out of specially engineered houses in north Alabama at seven weeks. Cornish hens are being sent to processing plants in five weeks.

These results are an achievement in environmental control, producing a healthy, fast-growing bird in ideal surroundings with a response to gain in weight that is setting this record for Jim Beasley of the Sweet Sue poultry operations at Athens, Ala., a veteran feed and poultry figure in the South.

Today, Mr. Beasley has nine climatized houses, completely windowless and growing conditions synchronized with all the factors the experts say it takes to produce a broiler in the shortest possible time. Soon, he expects to have a total of 25 of these houses, plus a new feed mill he expects to build to supply feed for his flocks as well as 400 head of cattle.

Sexes Segregated

Not only are the broilers coming out at seven weeks, but production of Cornish hens has been so satisfactory to him that he is expanding production of these. He is planning to sex baby chicks and then grow them segregated. Since the female doesn't grow at the same rate as the male, he figures he can have male broilers in six weeks and Cornish hens at five, give or take a day or so.

The first three houses were completed last summer and the first batch of birds was started in December when the temperature hovered around 12° above zero. However, with good insulation, complete thermostatically controlled heat calculated to the extent of measuring how much heat the chicks themselves would give off, the first take-outs were highly satisfactory, he said.

In these three houses, each 37 by 296 ft., Mr. Beasley had 33,000 birds. Each chick was allowed 0.6 sq. ft. of space. At the conclusion of the first test run, the birds were pulled at seven weeks, with average weight being 3.11 lb.

The mortality rate hit a very satisfactory low for him. There were only 74 lost out of the 33,000 and condemnations amounted to only 96. This record was achieved with no medication and there was only one vaccination against Newcastle, Mr. Beasley said.

Poultrymen from all over the nation and from several foreign lands have paid visits to the Beasley houses.

"We're always glad to see people, but showing them around is getting to be a problem," he noted. "We're having to put up signs now telling people visitors to the houses are not welcomed and that the houses are off-limits," he said.

One group of poultrymen from the Midwest told Mr. Beasley that his houses were the finest they had ever seen.

Mr. Beasley's houses are tailormade for his area. All known factors, such as mean temperature, housecapacity, moisture, heat and humidity from the chicks, are taken into calculation in planning his operations. Therefore, he emphasizes that all the factors involved at Athens will not necessarily apply at a point in North Carolina or Wisconsin.

Mr. Beasley says it is important for any grower looking into his type of operation to obtain a full dossier of information about local conditions and engineer the houses accordingly. "This is very important," he says.

Ventilation Described

The windowless houses are ventilated through controlled temperature winter and summer. He uses a blended-air ventilating system (Pockman). Four of these units are used in each of the houses, but again he points out that the number of units required is based on number of birds, local conditions, etc. The units are equipped with 24-in. fans. In the summer these fans pull air from the outside through an evaporative water system. The water is supplied in a steady flow from nearby wells. Filter pads clean the air as it passes through the moisture.

In the winter, thermostatic controls set the amount of cold air taken in and blend it with the warm air already inside, thus producing an even temperature and tending to control respiratory diseases.

As new birds are brought in, a scale of temperatures is used. During the first week the temperature is set at 90°, then lowered to 80° the second week. For the third, it is dropped to 75° and then to 70° for the remainder of the brooding period. Mr. Beasley points out that this controlled temperature provides ample heat for body warmth and saves much of the feed that otherwise would be used for warmth.

Air drawn through the moisture-laden pads over the air intakes attached to the evaporative coolers is most effectively used during the middle of the day, Mr. Beasley says.

Proper environmental control means a lot of things, one of which is proper lighting to promote growth, and there is a scale of lighting just as there is for temperature control. Mr. Beasley says this control of light has been a factor in stepping up growth.

Each house has a lighting schedule. For the first two weeks, lights are burned 24 hours daily. The light intensity is the full 920 watts with the rheostat completely open.

At the end of the first two weeks, the lights are set via a time clock to provide three hours of light at full intensity and one hour of darkness. This on and off light cycle is repeated consecutively six times, which would be the equivalent to a 24-hour day. The birds remain on this light cycle for the entire balance of the growing period.

Then when they reach six weeks of age, the light intensity is reduced to one fifth the original light intensity (1/5 x 920 watts = 184 watts). This is accomplished by setting the rheostat control back 4/5 of one revolution. The on and off light cycle remains the same.

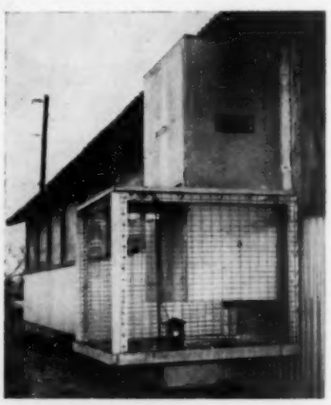
There is a feeling that environmental control also means a happy, contented and undisturbed bird. Being well fed and free from stress, Mr. Beasley's chicks are so well acclimated they do not become excited by workmen or strangers entering the houses. It's possible to reach down, pick them up without having to chase chickens all over the house. They're that tame and contented, Mr. Beasley says.

VACUUM CLEANED—Vacuum cleaning of waterers is demonstrated here by an employee of the Sweet Sue poultry operations at Athens, Ala. The cleaner collects debris and carries it outside the building through the hose.

Each of the new houses Mr. Beasley has under construction is an improvement over the first three.

An aluminum plyboard lining is used for the interior sidewalls and ceiling. The ceiling is 7 ft. off the floor and the sidewalls run 6 ft. from foundation to ceiling.

Insulating material 2 in. thick is applied to the sidewalls and insula-



AIR BLENDER—This evaporative air blender combines outside air with inside air and adjusts the temperature thermostatically for broiler houses built by Sweet Sue Poultry at Athens, Ala. Shown is one of the operation's older houses. Newer houses have no windows.

INTERIOR—This view shows the vast open space inside each of the environment-controlled houses. The buildings are insulated throughout. Ceilings and walls are lined with aluminum plyboard. Future houses built by Jim Beasley may be without poles.

WALLS, CEILINGS—Carpenters nail aluminum plyboard to ceiling beams and wall studs inside new Sweet Sue broiler houses. Insulation 2 in. thick is nailed between studs before plyboard installation. Also, insulating material is spread 6 in. deep above ceiling.

SELLIN' SAM **By Jim Zilverberg**

"—and stay out!"

tion 6 in. deep is poured above the ceiling.

The exterior of the buildings is covered with aluminum sheeting, as are the roofs.

Mr. Beasley is now working on plans for other houses to be completely free of support posts or columns of any kind. "The new houses will have nothing but space from one end to the other," he said.

The original houses are heated with coal. Hot water pipes run through the buildings from a central boiler. The pipes, ¼ in. in diameter, are finned.

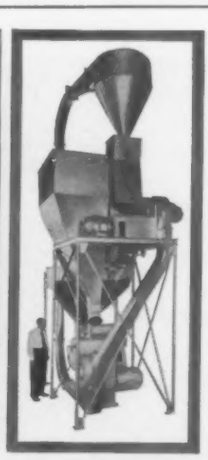
In the newer houses, Mr. Beasley is planning to use a new butane heating system which he believes will be more convenient and efficient.

Feed is now being hauled to the houses in sacks from his feed mill in downtown Athens. Feeding is being done with both hand and automatic feeders. However, Mr. Beasley plans to use automatic feeders only in the new houses. Use of bulk trucks also is a part of his future plans.

Vacuum System

Most of the work is handled by only two men per house. This has been made possible by keeping an open mind on new improvements. One of these is a vacuum system for cleaning waterers. The vacuum tank is fastened to the exterior of the building and a hose with a long nozzle is periodically run through the waterers, clearing out the debris. This is then sucked through the hose to the outside of the building where it goes down a drain ditch.

This is just one of the many things the north Alabama grower, processor and feed man has done to better the conditions under which his birds are produced. He wants the best and he likes to lean back in his chair at his office at the processing house and say: "We process nothing but the best."



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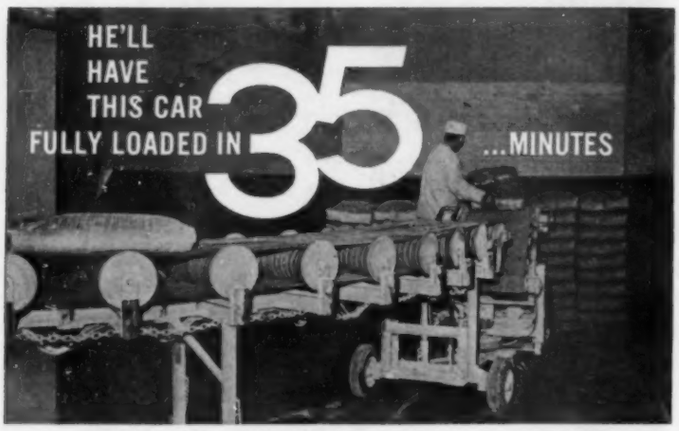

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POULTRY EQUIPMENT FACILITIES—The Keen Manufacturing Corp. recently opened this 100,000 sq. ft. manufacturing center at Millville, N.J. The facilities will be utilized to manufacture Keenco's line of equipment for the poultry industry. Offices are under construction on the second floor of the new building, and a permanent display of the company's heavy-duty poultry equipment will be installed.

Plan Poultry Marketing Institute for May 2-3 At Cornell University

ITHACA, N. Y. — An educational program designed to help poultry industry men improve their marketing and sales practices will be held at the New York State College of Agriculture, Cornell University, Ithaca, May 2-3.

The spring event, to be attended by egg distributors, retail store personnel, producers who sell to preferred outlets and county agricultural agents, is the second of its kind to be held on the Cornell campus. Called the "Egg and Poultry Marketing and Merchandising Institute," this year's program represents an expansion over last year's event. At the request of industry representatives, topics on poultry meat are included this year.

Highlighted will be a discussion of promotion and publicity by Leslie Driggs, farm products promotion coordinator for the New York State Department of Agriculture and Markets; practical steps in high volume egg marketing by Harry E. Drews, consulting engineer from Springfield, Mo., and federal poultry and egg inspection and grading programs by Hermon I. Miller of the U.S. Department of Agriculture.

Other Speakers

John C. Huttar, director of poultry relations at G.L.F. in Ithaca, will stress the need to correlate production with consumption at a given price.

L. A. Wilhelm, director of poultry development and market research for the Quaker Oats Co. in Chicago, will tell how eggs and poultry can compete successfully for retailers' merchandising time and space.

In a panel discussion, the pros and cons of marketing fresh vs. frozen poultry and of dry packing as against ice packing fresh poultry will be described by Dr. Robert C. Baker, Cornell; Bruce Failing, marketing specialist for the Beacon Milling Co. in Cayuga, N.Y., and Alfred Van Wagenen, director of research for the Northeastern Poultry Producers' Council in Trenton, N.J.

L. W. (Skip) Cassel, director of practical research at Whitmoyer Laboratories in Myerstown, Pa., will give a humorous and informative talk Tuesday evening, May 2, following a banquet at the Statler Inn.

Canadian Mills Top Wheat Board Prices

OTTAWA — Fears that western grain producers in this country selling farm-stored grain direct to feed mills instead of to the Wheat Board would lose money on such transactions are unfounded, Alvin Hamilton, agriculture minister, said.

A comparison of feed grain prices quoted by the Wheat Board and the feed mills in Manitoba, Saskatchewan and Alberta to the end of February showed that "generally the prices in all three provinces are comparable," he stated.

A Wheat Board spokesman in Ottawa said that prices differ in each province but in general the feed mills were quoting prices 5 to 7¢ higher than those offered by the Wheat Board.

Transportation costs of feed grain influenced price quotations, he said. This was particularly true in one section of Manitoba where the feed mills were quoting prices as much as 30¢ over those offered by the Wheat Board. However, in southern Saskatchewan where there is a limited demand for feed grain, the Wheat Board was topping prices quoted by the mills by an average of 5¢ per bushel, it was noted.

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JOE BROOKS

BY AL P. NELSON

Suggestion Makes More Sales

The heavy set farm woman, a scarf over her greying hair, came ambling into the salesroom of the feed mill. Spotting Joe Brooks talking to Milt Peters, she made her way toward him. The air was filled with the steady "cheep-cheep" of boxes of baby chicks awaiting delivery to customers.

"Oh, Mr. Brooks," the woman said. "Is it true that you are offering $10 cash to the person who guesses closest to the number of baby chicks that you are going to sell this spring?"

Joe smiled. "Yes, Mrs. Decker, it's true. I'm offering $5 cash as the second prize, too. Take a look at this sign. It gives all the details." He pointed to a large placard with copy in red and black.

The woman studied the copy, and then said, "I think I'll enter, Joe. I've always been lucky in contests and things. And you don't have to buy anything to enter, do you?"

"Not a thing," Joe said smilingly. "Just register your guess, and that is it. May 31 is the deadline, though."

"The sign says you sold 45,000 chicks last year," Mrs. Decker said thoughtfully. "That's something to start with. Are your chick sales as good as last year, Joe.?"

Again Joe smiled. "Well, I really can't tell you, Mrs. Decker. You people will just have to figure that out for yourself. I can't make it too easy for you folks to win."

The farm woman chuckled. "Well, you can't blame us for asking, Joe. But I'll bet you're not selling as many chicks as last year."

"Why not?" asked Joe.

Mrs. Decker frowned. "Lots of people have been discouraged about egg prices the last two or three years. They figure there isn't enough profit in raising layers."

"People still eat a lot of eggs," Joe countered. "And bakers use many of them."

"I know," Mrs. Decker stated, "but too many people are raising layers and selling eggs too cheap. That's what's wrong with the market."

Stresses Quality Eggs

Joe smiled. "The right kind of eggs are selling well, I think. I know the manager of a large chain store in Milwaukee. He said that since he put in a stock of quality eggs, his eggs sales have gone up 65%. They sell at a premium. That means folks want eggs like that. The chain store manager said he bought farm run eggs before he contracted for quality eggs. Customers complained on the farm runs, he said, and so he quit. Now customers send others to his store to get quality eggs."

"I've heard that quality eggs sell," Mrs. Decker said, "but it's a lot of work, and I don't know if it would pay. Herm and me decided to keep only about 50 hens this year to produce eggs for our table and not raise any more layers till we see what happens."

"Too bad," Joe said. "You've got a well built layer house. And good equipment. Have you ever tried the idea of selling eggs at the roadside?"

The farm woman shook her head.

Joe considered for a moment. "Your farm is on an important highway. Lots of people travel it regularly. If you raise layers from a good strain, instituted a quality egg program and stuck a 'quality egg sign' at the highway, you could sell those quality eggs at 3-5¢ over the average dozen price—maybe more."

"I suppose so," Mrs. Decker said dubiously. "I've tried to tell Herman we ought to stay in the layer business, but he says it doesn't pay. This quality egg idea might work though, if we could get extra money per dozen. Maybe I can talk him into it for next year."

Joe smiled. "Next year is a long time away, Mrs. Decker. And you might be passing up lots of egg profits in the meantime. It might be a good idea to start this year—now. We could get quality chicks for you inside a few days."

The farm woman looked startled. "But this is May, Joe. Sorta late to buy chicks for early fall eggs."

Joe smiled. "Oh, these chicks if fed

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CLASS IN SESSION—Monsanto Chemical Co. marketing personnel are pictured here getting briefing on latest developments in the feed industry from product supervisor Dr. G. Lynn Romoser during a recent meeting of the agricultural chemicals division annual feed additives sales school.

Those attending are, clockwise around each table: J. Robert Schumacher, St. Louis; George E. Mabie, New York district; Harvey L. Weyen, Cincinnati district; Joseph W. Tripp, San Francisco district; Reginald F. Southerland, St. Louis; Eugene D. Smith, St. Louis; Mac S. Davis, Atlanta district; Robert E. Baynard, St. Louis district; Donald R. Fischer, St. Louis; G. C. Davis, St. Louis; James H. Senger, St. Louis; Bobby E. Ford, El Dorado district; Dr. Robert B. Grainger, St. Louis; John W. Garvin, St. Louis; Hans Roeleman, St. Louis; William O. Butler, St. Louis district; Ben W. Martin, St. Louis, and Dr. Romoser, St. Louis.

properly will come along fast, Mrs. Decker. And if you wanted you could buy 100 or more started chicks or pullets, so that you would have those early eggs you speak of."

"I've heard about them," Mrs. Decker said. "Are lots of farmers buying them?"

Joe nodded. "Yes, but in order to get them you have to sign up now for June or July delivery. The farmers I have raising these chicks must be guaranteed the sale of them."

"How much do they cost?"

Joe Gives a Price

"Well, a pullet ready to lay is worth about $1.75," Joe said. "You can get started chicks for much less depending on how old they are."

Mrs. Decker smiled. "You mean then that I could buy chicks from you for a quality flock and bring them along on schedule, and also buy started chicks or pullets if I wanted to, just to guarantee having early eggs?"

Joe nodded. "Yes, you can. I have quite a few customers, too, who don't want to bother raising chicks during the spring when their work load is heavy. So they have placed orders for delivery of started chicks and pullets for July, August or September."

"Well, what do you know about that?" Mrs. Decker said enthusiastically. "I'm going to tell Herman about this. When I explain that quality egg program, and the idea of selling quality eggs through a roadside sign at higher prices, plus the opportunity to buy started chicks and pullets ready to lay, maybe we'll be in the egg business this year."

"We'll do all we can to help you," Joe said earnestly. "How would it be if I dropped out to see Herman tomorrow night—after you've had a chance to talk to him?"

Mrs. Decker's eyes twinkled. "Oh, would you? Between us, he'll just have to agree. And I hope I win that chick guessing contest, too."

"I do, too," Joe said. "But if you don't, you'll earn much more next fall when your quality egg program begins to pay off."

When Mrs. Decker had gone, Milt Peters grinned. "Joe, this chick guessing contest is a dandy promotion. I never know it would work so well. It has stirred up interest in chicks and in the raising of layers."

"Sure," smiled Joe. "I'm almost getting hoarse from talking chickens and eggs to women who come in to register in that contest, but I don't care. The drug store has a big supply of cough drops, and man, the chicks we are selling!"

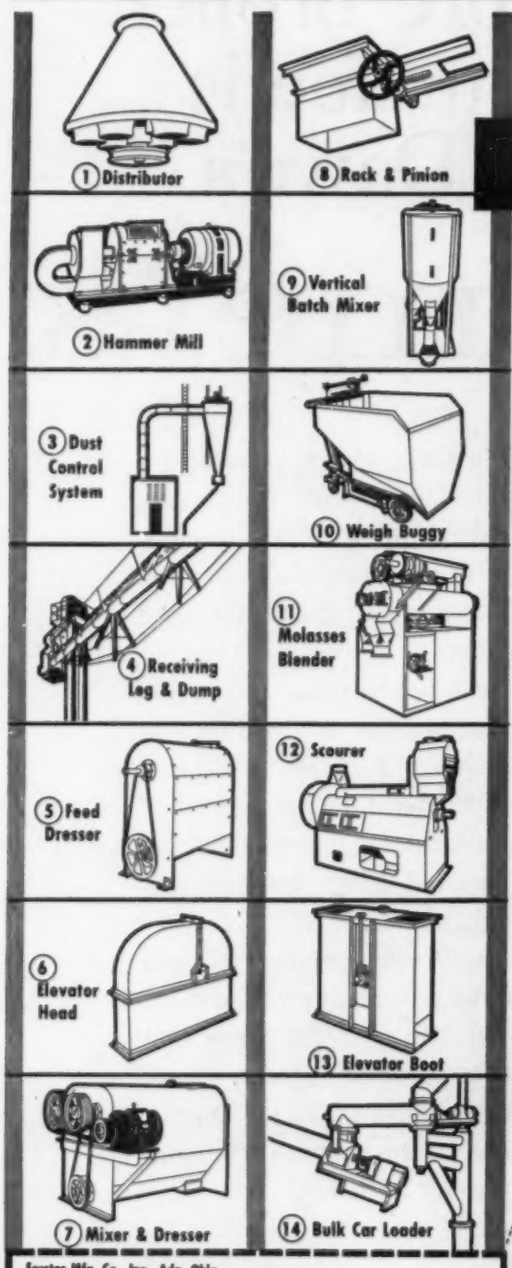
Idaho Packing Plant Design Work Underway

TWIN FALLS, IDAHO — Preliminary engineering work on a new packing plant to be built here is underway, according to Bob Kemp, manager of Armour & Company's King Packing Co., Nampa, Idaho.

The proposed plant would have a lamb killing capacity of 125,000 lambs per year with slaughter and cooler capacity to handle a maximum of 6,000 lambs per week during the peak fat lamb season. Cattle capacity is projected on a 60,000 kill per year with a maximum cooler capacity of 1,500 head per week.

A cattle feedlot is planned in connection with the new Armour plant. However, it was noted that it is planned to feed a relatively small number of cattle at the plant location. Estimated maximum capacity would be 2,000 head. It was reported that any additional feeding Armour participates in will be done with other commercial feed yards in the area.

Mr. Kemp says that cattle supply will be ample in the southern Idaho area to support the operation. There is currently no federally inspected packing plant in the area, he noted. He commented that new land areas and projected developments are other reasons which the firm felt warranted such a plant.



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AVI APPRECIATION DAY—Mayor Joe D. Gault, left, of Dardanelle, Ark., is pictured here presenting the "key to the city" to Harold Snyder, president of Arkansas Valley Industries, Inc., at Dardanelle's AVI Appreciation Day. Looking on at right is J. Frank Holt, Arkansas attorney general.

Poultry Plant Opens; Groups Honor AVI

DARDANELLE, ARK.—Residents of this area turned out in large numbers recently to honor Arkansas Valley Industries, Inc., large integrated food and poultry firm, on "AVI Appreciation Day," sponsored by the Dardanelle Chamber of Commerce and other civic groups.

Highlights of the day were an hour-long parade through the Dardanelle business district and the presentation of the "key to the city" to Harold Snyder, AVI president, by Mayor Joe D. Gault. Most Dardanelle merchants had congratulatory slogans on their store fronts, and there were many congratulatory advertisements in the local press.

AVI employees were paid in $2 bills so the firm's payroll would have a greater impression on the local economy for the weekend.

The celebration was instigated by the chamber of commerce to mark AVI's assumption of control of a poultry processing operation in Dardanelle. AVI's general offices are at Dardanelle. The new poultry processing operation is under the direction of AVI Foods, Inc.; Janet Davis Kitchens, Inc., and Dardanelle Ice & Cold Storage Co., subsidiaries of AVI.

Special guests for the celebration included J. Frank Holt, Arkansas attorney general, and Pat Caviness, assistant to the executive director of the Arkansas Industrial Development Commission.

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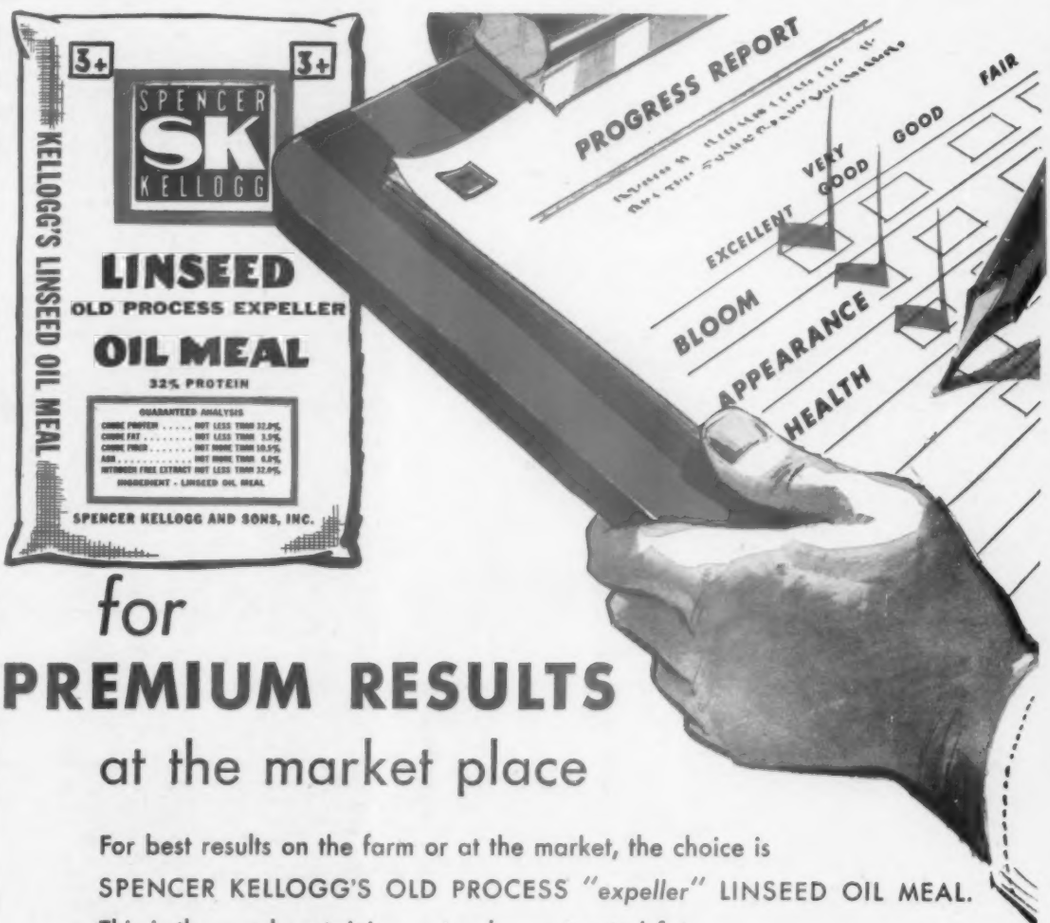

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The Problem of Egg Shell Quality

Factors Affecting Egg Shell Quality Are:

- **Physiological**
- **Environmental**
- **Pathological**
- **Nutritional**
- **Genetic**

By Gordon E. Bearse
Washington State University

Defects in the shells of eggs are a serious problem to the producer and the distributor, and are even of concern to the housewife. Such characteristics as roughness, mottling and non-typical shape are objectionable, but the most serious problem is thinness of the egg shell since this condition results in economic loss because of breakage. This problem, recognized for many years, is being brought into focus with increased use of mechanical egg handling equipment.

The shell of the egg is affected by physiological, pathological, environmental and nutritional factors. A major physiological effect is the trend toward thinner shells as the bird ages. Shortly after egg production starts shell thickness is the greatest. The longer the bird produces eggs the thinner the shells become. With birds bred for long periods of profitable production, as are today's laying strains, shell quality may become a problem before the flock has declined in rate of lay sufficiently to indicate it should be sold. Molting, either natural or forced, will partially restore egg shell quality.

Another physiological effect that has been observed is that the first and last eggs of a clutch are thicker than the other consecutive eggs. This is probably due to these eggs being held in the shell secreting part of the oviduct for a longer period of time before being laid. On the other hand, it has been noted in birds that take short pauses that the egg shells before and after pauses are thinner. Rate of lay or intensity of egg production may also be correlated with shell thickness. High producers in a flock often produce the thinnest shells.

Pathological Conditions

Certain pathological conditions have been shown to affect egg shell quality. Birds affected with respiratory diseases, such as infectious bronchitis and Newcastle disease, frequently lay abnormally shaped and shell-less eggs. It has been shown at the Western Washington Experiment Station that Newcastle disease and coccidiosis reduce shell thickness. Any disease that reduces feed intake will probably reduce shell quality. It is obvious that a good health program, including proper vaccination where indicated, is essential for the maintenance of good shell quality. Aside from that, little can be done to deter the gradual decline in shell quality which occurs with time in every flock of layers, although many nutrient factors have been studied in this connection as will be discussed later.

That environmental factors have an effect on shell thickness was first demonstrated by Kansas workers who showed many years ago that temperature over 70° F. resulted in a decrease in thickness of egg shells of birds held under such an environment compared with others held under lower temperatures. This effect of high temperatures often explains the noticeable slump in egg shell quality in the late spring or early summer frequently reported by poultrymen. Such temperatures may temporarily accentuate the gradually declining trend in egg shell thickness.

Temperatures above 70° F. reduce the blood calcium level of the bird. This is probably a direct effect but may be indirectly affected by reduced feed intake and, therefore, calcium intake during warm weather. This decrease in shell thickness at high temperatures may also be explained on the basis of reduced thyroidal activity, for the secretions of this gland are involved in calcium metabolism.

In those geographical areas where temperatures seldom exceed 70° for more than a few hours of the day in the summer season only, it is doubtful if high temperatures would have a serious effect on egg shell thickness. The effect of cycling temperatures on various performance factors is now being studied by Pennsylvania State University. It may not be economical to insulate houses or to install and use fans and foggers and other cooling methods for the purpose of improving shell quality if temperatures are above 70° F. for only part of the day. However, light colored reflective roofs would be desirable. In sections where warm nights as well as warm days are experienced for extended periods of time, cooling of houses by insulation and other means might be worthwhile.

Nutritional Factors

Many nutritional factors have been studied to determine their relationship, if any, with egg shell quality. Such nutrients as calcium, phosphorus, vitamins C and D, manganese and zinc are related in some way to the formation of egg shells. Sixty to 70% of the calcium for each egg shell is obtained from the daily feed intake while the other 30 to 40% is derived from the bones of the hen's body.

The National Research Council (N.R.C.) recommends a level of 2.25% calcium in a laying ration. With today's high producing stock being smaller in size, thereby requiring less feed and consequently consuming less calcium, and with the present trend to the use of high energy rations, of which a bird eats less, there has been some concern as to whether the 2.25% level is adequate. A report from the Idaho Station indicates that with temperatures less than 70° F., 3.75% calcium is necessary for highest specific gravity readings of whole eggs, a measure of egg shell thickness. With temperatures over 70° a calcium intake of 4.50 to 5.00% is suggested. These levels of calcium for laying rations are higher than any previously reported for temperatures below 70° F. It should be pointed out that the above results were based on work done in environments that were controlled at about 75° and 55° F. except that in the late spring and summer the temperature in the low temperature environment approached that of the high temperature environment. Thus the normal daily fluctuations in temperature that most commercial flocks are subjected to did not exist. How many hours above 70° each day a hen must be submitted to in order to decrease the thickness of its egg shells is not known. It should be noted further relative to the Idaho work that the only experiment conducted at temperatures below 70° had no level of calcium between 2.25% and 3.75%. Furthermore, replications for each calcium level within the temperature zones were not used. It was interesting to note in this work that egg production was unaffected by the high calcium levels but that feed efficiency was somewhat reduced.

Access to Oyster Shell

Recently in an experiment at the Western Washington Experiment Station, the effect on shell quality of permitting pullets between the sixth and 11th months of egg production to have access to oyster shell was studied. These birds had been fed a 2.25% calcium ration. The results shown in Table 1 indicate that the decline in specific gravity was less, though not significantly different, in those pens that were permitted free choice consumption of oyster shell. In another trial, the results of which are shown in Table 2, four pens of 150 13-month-old pullets each on a 2.64% level of calcium in the mash, which comprised 60% of the ration, and with access to oyster shell, were individually indexed for specific gravity for three days. For 10 days two of the pens were then fed a mash which had the calcium content raised to 5.00%. Free choice oyster shell feeding was continued. Following this the eggs were again observed for specific gravity for a three day period. When all birds laying in both observation periods were considered there were no differences between treatments. However, when only birds that laid at least two eggs in each of the three day periods were considered there was less decrease in specific gravity for those birds fed the mash which had been increased in calcium content to 5.00%, equivalent to about 3.00% in the mash and grain diet.

In the Idaho experiments mentioned above it was found that free-choice shell fed with a 2.25% calcium ration resulted in a progressively increasing calcium intake throughout the laying year. This resulted in significantly higher specific gravity in the winter and spring with a trend in that direction in the summer. The average yearly calcium level of the diet under this free-choice system was 3.63%. However, shell quality more nearly paralleled that of the 3.00% calcium ration, in which the calcium came from ground oyster shell, than it did the 3.75% calcium ration. It was felt that this indicated that calcium supplied as whole shell, fed free-choice, was not as efficiently utilized as shell flour. However, in another experiment hen size shell incorporated in the mash was not inferior to shell flour when both were compared at 2.25 and 3.38% calcium.

Further studies by the Idaho workers, using two inherently different strains with respect to shell quality, have shown significant differences in specific gravity of eggs, from birds

Gordon E. Bearse

AUTHOR—Mr. Bearse, a 1928 graduate of the University of Massachusetts, has been on the faculty of Washington State University since 1929. Presently he is poultry scientist at the Western Washington Experiment Station, Puyallup, Wash. The experimental facilities there have a capacity of 5,500 laying birds and 8,000 fryers and pullets. Mr. Bearse is a past president of the Poultry Science Assn.

TABLE 1. Results of Supplemental Feeding of Vitamin C and Zinc, When Fed With and Without Supplemental Oyster Shell, on Egg Shell Quality

Treatment*		Change in sp. gr. from prelim. to 5th pd.‡ obsv.		Change in shell smooth.† from prelim. to 5th pd.‡ obsv.	
Free choice oyster shell	Supplement	By lots	By rations	By lots	By rations
No	None	—20**	—23**	.75	.76
		—26		.76	
No	Vitamin C¶	—30	—25	.82	.86
		—20		.89	
No	Zinc¶	—46	—40	.79	.79
		—33		.79	
No	Vitamin C & Zinc	—30	—35	.92	.76
		—40		.60	
Yes	None	—10	—17	.85	.82
		—23		.78	
Yes	Vitamin C	—07	—20	.85	.84
		—33		.83	
Yes	Zinc	—17	—24	.94	.79
		—30		.63	

*Basal ration contained approximately 2.25% calcium.
†Smoothness was scored from 0, smooth, to 3, extremely rough, resulting from calcareous deposits on the shell surface.
‡A period is 28 days.
¶Vitamin C and zinc fed at 20 gm./ton and 50 ppm, respectively.
**Difference in specific gravity x 10,000.

TABLE 2. The Effect of Increasing Calcium in Mash* on Specific Gravity of Eggs When Free-Choice Oyster Shell Is Being Fed

Calcium in mash*	Min. No. eggs observed/hen/ 3-day period	Specific gravity [(Sp. Gr. —1) 1,000] Prelim.	Post change	Difference
2.64% throughout†	1	80.4	79.3	—1.1
	2	81.3	80.3	—1.0
2.64% changed to 5.0%†	1	80.8	79.8	—1.0
	2	81.4	81.0	—0.4

*Mash comprised 60% of ration and whole grain 40%.
†Hen size oyster shell continuously available.

fed diets containing 3.75% calcium compared to others receiving diets with 2.25%. A commercial laboratory in Pennsylvania has reported improved shell quality for New Hampshire layers in cages when fed levels above the N.R.C. recommended level, while, on the other hand, Michigan experiments failed to demonstrate a difference in shell thickness between 1.9, 2.25, 2.8 and 3.5% calcium levels.

Ascorbic Acid

In Colorado experiments, with diets containing 40 gm. of ascorbic acid per ton, calcium levels of 2.5 and 3.0% produced significantly thicker egg shells that did a level of 2.0%. Ontario workers, using birds that had been in production for a year, reported that with diets of 1.0, 2.5 and 4.0% calcium, significant increases in specific gravity and significant decreases in egg weight loss occurred with increasing calcium levels. In this experiment the birds were kept at a constant temperature between 75-80° F.

At the present time, the N.R.C. is not yet convinced that the recommended level of 2.25% calcium for layers should be adjusted upward.

While phosphorus levels within reason do not seem to have an effect on egg shell quality, nevertheless it should be pointed out that phosphorus is involved in the deposition and withdrawal of the skeletal calcium used in shell formation. It is essential that a laying ration have a minimum of 0.4% inorganic phosphorus.

The mineral manganese has been shown to be related to egg shell quality. It is quite generally recommended that this mineral be included in laying rations although the N.R.C. does not make a recommendation. The N.R.C. does suggest a level of 15 mg. per pound of ration for breeding hens. Manganese functions in shell formation primarily as a component of enzymes which are necessary for the proper absorption and utilization of calcium and phosphorus.

Carbonic Anhydrase

Zinc is another mineral that is involved in shell formation because it is a component of the enzyme carbonic anhydrase, which is an important factor in the conversion of calcium in the feed to calcium in the egg shell. Maryland experiments showed an effect of supplemental zinc on egg shell quality when the birds were fed a low zinc diet (7 ppm.). The addition of supplemental zinc to ordinary laying rations is of questionable value, apparently sufficient being supplied by the ingredients commonly used. In the experiment at the Western Washington Experiment Station previously referred to, the results of which are given in Table 1, the effects of adding supplemental zinc to an ordinary laying ration were observed. The normal decline in specific gravity was not retarded by the addition of 50 ppm. of zinc. Likewise, experiments at Idaho did not indicate a beneficial effect on egg shell quality from additions of zinc to laying rations.

Many minerals are involved indirectly in shell or bone formation through the enzymes they are a part of and accordingly there have been attempts to determine if increasing their intake would favorably affect shell quality. The results have been disappointing. Recently kelp ash was used in Maryland experiments because it is such a good source of many trace minerals; however, no improvement in shell thickness was noted. The belief on the part of some poultrymen that milk products will improve shell quality was checked in Idaho and Maryland experiments. The inclusion of 2.5% dried whey in 2.25, 3.00 or 3.75% calcium rations or a 2.25% calcium ration with free-choice oyster shell was of no benefit in maintaining better shells in the Idaho research. This was also true for calcium lactate in trials at that station. Furthermore, lactose and calcium lactate were not very promising as judged from a preliminary Maryland report.

The thyroid gland has been implicated in calcium metabolism. Since iodine is a component of thyroxin, the active fraction of the thyroid gland, iodine can be considered as involved in shell formation. Studies

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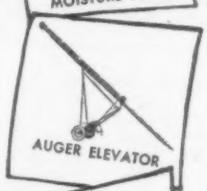
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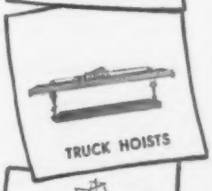
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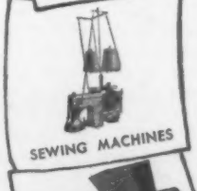
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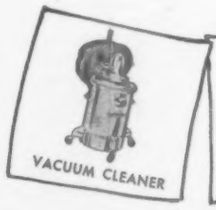
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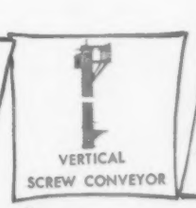
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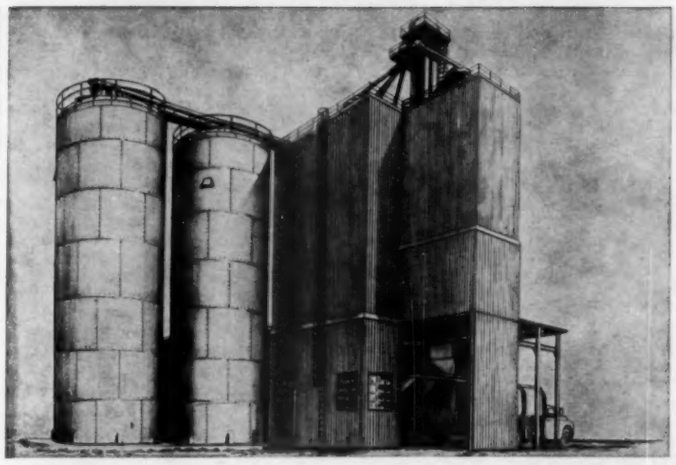

NEW FACILITIES—Here's an artist's view of new bulk grain and ingredient storage, feed mixing and load-out facilities now under construction for Montgomery-Bucks Farm Bureau Cooperative Assn., Souderton, Pa. Current facilities produce 60 tons of feed per day, and this new facility will provide an increased capacity of 12-14 tons per hour of mixed feeds and grain storage capacity of 16,800 bu. The new addition provides for receiving bulk ingredients or grain from trucks or cars with distribution to the grain storage tanks or to 17 in-plant ingredient storage bins with a total capacity of 400 to 420 tons with necessary cleaning and weighing units; new grinding and mixing plant with 12-14 tons per hour capacity; finished feed bulk storage of 50 tons; and a mobile type bulk load-out scale for loading bulk trucks. Design, equipment and erection are being handled by Sprout, Waldron & Co., Inc., Muncy, Pa.

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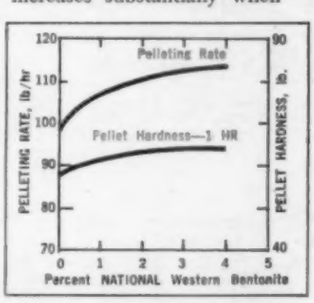

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with iodinated casein, which has thyroxin-like activity, have indicated that this compound may have a tendency to improve quality of shells laid by inherently poor shell quality individuals.

Vitamin D Importance

Two vitamins seem to be involved in the mechanisms that control egg shell formation. The importance of vitamin D in connection with calcium absorption and metabolism is well known and needs little comment. A level of 225 I.C.U. of vitamin D_3 per pound of laying ration is recommended by the N.R.C. Studies at the Western Washington Experiment Station failed to demonstrate any advantage of increasing this vitamin or calcium, either in combination or separately, throughout the year.

Colorado workers have recently called our attention to another vitamin, ascorbic acid of vitamin C, that seems to be associated with egg shell deposition. Particularly at temperatures above 70°, with higher levels of calcium than recommended by N.R.C., and with protein levels lower than commonly used in commercial rations, these workers have shown significant increases in egg shell thickness in some trials and not in others with levels of vitamin C varying from 10 to 40 gm. per ton. Moreover, they were able to demonstrate differences in egg shell strength, as determined by hitting two eggs together, between lots of birds receiving supplemental ascorbic acid and those not on the supplemented diet. A beneficial effect on shell quality was not demonstrated by Arizona workers when they fed vitamin C to birds subjected to high summer temperatures. They used a level of 2 lb. of ascorbic acid per ton, over 20 times more than was used by the Colorado researchers who point out this level may have had an adverse effect.

An experiment at the Western Washington Experiment Station to determine if ascorbic acid would improve shell quality under Western Washington summer conditions has been conducted and the results are shown in Table 1. A level of 20 gm. of ascorbic acid per ton was fed to duplicate pens of 70 birds each with diets containing 2.25% calcium with and without free choice oyster shell. An additional two pens on the same calcium level received the vitamin C supplement plus 50 ppm. of zinc. The pullets were 11 months of age when the five months experiment was started in June. The results as measured by specific gravity and shell smoothness do not indicate an improvement in shell quality as a result of vitamin C supplementation. Similar results have been reported in Ottawa, Ontario, Idaho, Iowa and Maryland studies.

Results of studies with antibiotics and tranquilizers have been conflicting and it is generally agreed that they are not helpful in promoting better shell quality except under conditions of stress from disease or high temperatures. It should be pointed out in connection with the feeding of antibiotics that the potentiation of antibiotics, or increasing the blood level of these drugs by reducing the

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calcium carbonate level of a laying ration, will affect egg shell quality adversely within a very short time.

Such drugs as sulfanilamide and sulfapyridine will have an adverse effect on shell quality because of their inhibition of the enzyme, carbonic anhydrase. Other sulfonamides, at least at the levels commonly used, are without effect.

Genetic Factors

Some of the physiological, pathological, environmental and nutritional factors that affect egg shell quality have been described. Genetic factors also affect shell quality. While the various ramifications of the egg shell problem have not been solved and probably will not be solved for a long time, if ever, there are a few things that can be done to help the problem. These are: (1) stock should be purchased from breeders that are known to be working on the egg shell problem; (2) diseases should be controlled by practicing good management and using a sound vaccination program; (3) a ration containing the N.R.C. recommended amounts of the various nutrients should be fed and extra calcium provided by means of free choice oyster shell or limestone grit; (4) only young birds, not over 12 months in lay, should be kept because egg shell quality declines with age, with forced molting suggested if birds are to be kept longer; (5) if temperatures above 70° F. are common, insulation and cooling methods should be adopted.

Business Increase Told

DENVER—Colorado Milling & Elevator Co. has reported net income for the nine months ended Feb. 28, 1961, at $791,554, or $1.43 a share, compared with $708,921, or $1.28 a share in the like period a year ago. Net sales and other operating income were listed at $91,134,848, compared with $94,443,282.

Credit Outstanding for Broiler Production Up In February in South

ATLANTA—An increase was registered during February in both trade and bank credit outstanding for broiler production at selected feed manufacturing firms and commercial banks in the Sixth Federal Reserve District, the research department of the Federal Reserve Bank of Atlanta reported at the close of March.

However, total credit outstanding at these reporting feed firms and banks still was sharply below the total of a year earlier, the Atlanta bank said.

Dealer accounts of trade credit advanced for broiler production by selected feed manufacturing plants in the district increased proportionately more than producer accounts. Outstandings of bank credit rose in both dealer and producer accounts in February.

New loans from district banks for broiler production decreased month-to-month in dealer accounts but increased sharply in producer accounts, according to the Atlanta bank's report. Repayments to banks by both dealers and producers declined from January to February of this year.

"A sharp upsurge in broiler placements in five (of the six) district states occurred in February, 1961," bank officials reported, "and they exceeded placements a year ago by a wide margin.

"Prices received by farmers for broilers in district states increased sharply from an average of 15.7¢ lb. in mid-January, 1961, to 17.1¢ lb. in mid-February, 1961. Prices in mid-February, 1960, averaged 17¢ lb."

States in the Sixth Federal Reserve District are Alabama, Florida, Georgia, Louisiana, Mississippi and Tennessee.

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Egg Producers of Arkansas Consider Breaking Plants

LITTLE ROCK—Arkansas poultrymen, faced with possible overproduction of consumer eggs, are considering establishment of egg breaking plants in the state.

Meetings to discuss this type of operation were held in Little Rock and Springdale, and committees were appointed to obtain information on which to base future plans.

Initially, poultry producers and feed integrators learned that there may be as many problems connected with a successful breaking operation as there are with production of retail eggs.

John Randolph, operator of Delight Egg Co., Hope, said, "Some times you lose out because you can't handle a big order. Other times you find your frozen stocks don't move because small buyers can't handle your output. You will run into sales problems."

Harry Perry, Seymour Foods, Topeka, Kansas, cautioned the Springdale meeting to "be sure of your ground before you get into the egg processing business in any way." He warned that egg breaking plant operation is entirely different from the present type of Arkansas egg production.

Mr. Perry told the meeting that an egg processor will be attracted to Arkansas if there is sufficient annual volume of eggs to keep a plant in operation daily.

He said that high quality eggs are needed for breaking plants and that breakers were more likely to contract for their supplies with feed companies rather than with individual operations.

Jerry Hinshaw, general manager of the Arbor Acres Farm at Springdale, said the problem should be approached positively.

He added, "We have 3 million commercial hens in the state now. Some people think we'll have 15 million five years from now. The opportunities are great—if we make the most of them."

Elliott Roosevelt Ends Enzyme Career

MINNEAPOLIS — Elliott Roosevelt, who attempted to reorganize the bankrupt Northern Biochemical Co., Sheldon, Iowa, has joined a Minneapolis printing firm as a publications administrator.

Hoffman Callan Co., which publishes 17 monthly and quarterly magazines, announced April 6 that Mr. Roosevelt had joined its administrative staff. Mr. Roosevelt came to Minneapolis from Sheldon where he had attempted to salvage the enzyme marketing firm of Northern Biochemical after it went into bankruptcy. The chief stockholder in the now defunct operation was convicted bank embezzler Mrs. Burniece Geiger. Mr. Roosevelt had been named financial adviser for the firm just before discovery of the embezzlement brought the roof down on both the bank and the enzyme marketing operation.

NEW OHIO FEED FIRM

MARIETTA, OHIO—Articles of incorporation for Pioneer Feed & Supply, Inc., of Marietta have been filed with Secretary of State Ted W. Brown. Stock of the new corporation is listed at 500 shares with par value of $100. Incorporators are listed as Keith William Doak, Walter J. Hiener and Herbert E. Smith.

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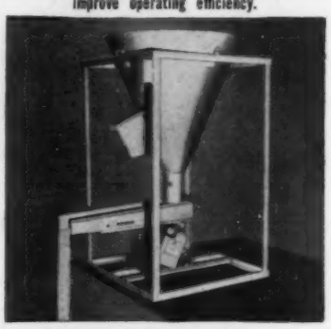

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NEW IDENTIFICATION—Two of the first feed bags to be identified in line with Central Soya's new corporate identification system are shown here being packed and sewn at the company's Decatur, Ind., feed mill. The bags feature a revised Master Mix brand mark. They also carry the company's new corporate mark, and the company and division names. Looking on while Robert Rawley (center) weighs, packs, and sews the bags are, from left: Lee Higgins and E. E. Reynolds, general sales manager and director of marketing, respectively, for the McMillen feed division, and Tom H. Allwein, plant manager.

Updated New Mexico Feed Legislation Signed Into Law

SANTA FE, N.M.—Governor Edwin L. Mechem has signed the "New Mexico Commercial Feed Law of 1961," a comprehensive updating of state legislation and amendments dating back to 1929.

As in past amendments, the new law makes the Board of Regents of New Mexico State University responsible for regulation of the sale and distribution of commercial feeds and customer-formula feeds throughout the state.

The updated law details regulatory practices generally current in the feed industry nationally. Each commercial feed must be registered before being distributed in the state, but customer-formula feeds are exempt from such registration. Each application for registration must be accompanied by a fee of $2 and all registrations expire each Dec. 31. Changes in the guarantee of either chemical or ingredient composition of a registered feed may be permitted provided there is satisfactory evidence that such changes would not result in a lowering of the feeding value of the product for the purpose for which it was designed.

Labeling requirements include: the net weight, the name or brand, the guaranteed analysis of the commercial feed, the common or usual name of each ingredient used, and the name and principal address of the person responsible for distributing the commercial feed. Labels must be affixed to the bag or container, or in the case of bulk feed, the label must accompany delivery. Rules for customer-formula feed—to be labeled by invoice—are also stated.

Feed Labeling Rules

One section adds: "If a commercial feed or a customer-formula feed contains a non-nutritive substance which is intended for use in the diagnosis, cure, mitigation, treatment or prevention of disease or which is intended to affect the structure or any function of the animal body, the Board of Regents may require the label to show the amount present, directions for use, and/or warnings against misuse of the feed."

Inspection fees will be 12¢ per ton, except where feed is distributed in packages of 5 lb. or less when an annual inspection fee of $20 may be paid. Quarterly statements must be filed showing number of tons distributed, and inspection fees must accompany them. Where more than one person is involved in the distribution of a commercial feed, the person who distributes to the consumer is responsible for reporting the tonnage and paying the inspection fee unless the report and payment have been made by a prior distributor of the feed. Records must be kept and penalties for non-compliance are stated.

Adulteration and misbranding are defined, and procedures for inspection, sampling, analysis and enforcement of regulations are detailed. Penalties from $5 to $100 are set for the first violation and fines from $100 to $1,000 are set for subsequent violations.

Copies of the bill and further information will be provided by the Agriculture Department of New Mexico State University, University Park, N. M. The new bill will take effect Jan. 1, 1962.

HOG CHOLERA OUTBREAK

ATLANTA, GA.—Reports of several outbreaks of hog cholera in the state have brought a warning for preventive action immediately in order to avoid, if possible, a repetition of last year's epidemic which cost farmers $500,000. Reports reaching the state department of agriculture of outbreaks led Commissioner Phil Campbell to issue the warning.

New plant of the Central Connecticut Cooperative Farmers Ass'n., Inc., Manchester, Conn., designed and constructed by Fitzpatrick.

Central Connecticut Co-op lowers costs with Fitzpatrick built automated mill!

The Central Connecticut Cooperative Farmers Ass'n., Inc., Manchester, Conn., has emphatically demonstrated the economy of replacing an obsolete . . . but not worn out . . . feed mill with an up-to-date automated mill. The new facility made possible an immediate 20% increase in production at a savings of 40% in production costs.

Present production of poultry feeds runs between 1,200 and 1,500 tons weekly, which will make it possible for the association to admit more egg producer members. Production can be increased as needed.

Sound interesting? Write us today for complete details!

Emanuel Hirth, general manager of the new mill shown with the control panel for the fully automatic batching system.

Utilizing old equipment wherever possible, Fitzpatrick cuts new mill or modernization costs. These 100 h.p. and 75 h.p. hammermills, and attrition mill were brought in from the old plant.

Raymond Kristof, production superintendent, checks pellets as they come out of pellet mill. He is well pleased with the outstanding performance of the new automated plant.

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TABLE 7. Carcass Grades on All Birds Marketed at 13 Weeks of Age

	Floor space .8 sq. ft. %	1.0 sq. ft. %	1.2 sq. ft. %
Grade A	66.4	68.0	82.1
Grade B	19.3	17.2	10.0
Grade C:			
Breast blisters*	9.0	9.1	6.1
Other	2.3	2.9	.3
Condemned:			
Air-sac	1.7	2.0	.5
Other	1.3	.8	1.0

*All were found on the males. Determination was made on the processing line by the authors.

TABLE 8. Assumed Costs of Production

Chick and brooding (per chick basis)	cents	Fixed overhead (per sq. ft. per yr.)	cents	Feed (per pound)	cents
Chick cost	10.00	Building	4.00	Starter	4.25
Sexing fee*	1.00	Equipment	4.75	Finisher	4.10
Heating	2.00	Interest	3.45		
Litter	.50	Taxes, insurance and repairs	2.36		
Electricity and misc.	.50		14.65		
	14.00				

*Omitted in calculations for sexes reared intermingled.

BROILERS

(Continued from page 26)

quality, was greater for males than for females and for intermingled rearing than for separate rearing.

(10) Returns per year were inversely related to floor space.

(11) The most profitable market age varied between 10 and 12 weeks, depending upon the factors of sex, floor space and method of rearing.

(12) Considering all treatments, maximum labor income occurred for males reared at .8 sq. ft. to 11 weeks of age.

Workshop Questions

Questions asked Dr. Wisman during the workshop session and his answers follow:

How did the consumer indicate her desire for a heavier broiler?

I stated that it was my opinion there was a potentially good market for a heavy broiler, or light roaster. This was supported by talking to certain market and processor people. This study was not intended to include consumer demand but only to determine age of maximum production efficiency and as it is influenced by floor space, sex and separate rearing of sexes. This question has to be answered first before consumer preferences, carcass quality, condemnation problems, etc., can be tackled.

Since feed efficiency decreases (more feed required per pound of meat) as birds get older, wouldn't it be better to grow five flocks per year rather than four flocks to 10 or 11 weeks of age?

Only to a certain point. We wanted to determine in this study what age this point was, i.e., where lowered feed conversion overcame lowered chick costs (greater for more lots per year). Age and number of lots per year, as well as feed efficiency by age, all have to be considered.

How are we going to reduce blisters and disease at these older ages?

Reports by geneticists indicate that feathering on breast of males can be improved through breeding. This is chief cause of blisters, remember none were found on females to 13 weeks of age. Other environmental factors cause blisters which management know-how should be able to solve. The same can be said of disease as far as finding better environment. I certainly wouldn't think all broilers should be grown to 11 or 12 weeks. At present it would be a gamble to hold broilers beyond nine weeks, for those who would chance it this study shows it could be more efficient, providing too much additional mortality would not occur.

If you were keeping broilers to 11 or 12 weeks of age, what feeding program would you use?

This is another "next thing" to look at. We would determine if a "post-finisher" ration (lower protein) would be in order. If sexes are grown separately, more custom-made rations would be advantageous.

In your discussion, I believe you stated that there was no difference in percent loss in live weight between age or sex from hauling. Your slide shows 1.2% difference between the males at nine and 13 weeks of age. Could you say that this amount of loss is not significant?

This 1.2% difference was not statistically significant, meaning next time the picture could be reversed. This 1.2%, therefore, is the same as no percent difference.

If you were keeping broilers to 11 or 12 weeks of age, what feeding program would you use?

(Question asked of and answered by Dr. L. M. Potter.) A 25% protein diet would be fed to 4 to 5 weeks of age, a 22 to 23% protein diet to 8 or 9 weeks of age and 20 to 21% protein diet to 11 or 12 weeks of age.

TABLE 9. Total Costs of Production per Pound per Lot of Sexes Reared separately*

Sq. ft.	Weeks of age 7	8	9	10	11	12	13
	cents	cents	cents	cents	cents	cents	cents
				Males reared separately			
.8	16.02	15.09	14.35	14.00	**13.84**	14.19	14.49
1.0	16.06	15.09	14.38	14.14	**14.03**	14.23	14.65
1.2	16.18	15.44	14.32	**14.06**	14.11	14.10	14.30
				Females reared separately			
.8	17.17	16.19	15.45	15.27	**15.05**	15.42	15.84
1.0	17.93	16.73	15.96	15.52	**15.50**	15.55	16.13
1.2	17.78	16.92	15.83	15.65	**15.58**	16.42	16.02

*Costs could not be determined for each sex when reared intermingled, since only feed consumption by pen was recorded. Values in bold face type are minimums.

TABLE 10. Total Costs of Production per Pound per Lot for Combined Sexes*

Sq. ft.	Weeks of age 7	8	9	10	11	12	13
	cents	cents	cents	cents	cents	cents	cents
				Sexes reared separately			
.8	16.55	15.59	14.84	14.55	**14.25**	14.72	15.08
1.0	16.85	15.85	15.07	14.68	**14.67**	14.79	15.29
1.2	16.87	16.11	14.99	14.76	**14.74**	15.11	15.50
				Sexes reared intermingled			
.8	15.75	14.95	14.31	**14.17**	14.18	14.48	14.80
1.0	16.25	15.36	14.55	**14.26**	14.29	14.33	14.76

*Values in bold face type are minimums.

Dr. Thayer Reports On Turkey Ration With 1.85 Conversion

SPRINGDALE, ARK. — Dr. Rollin Thayer, Oklahoma State University poultry nutritionist, reported here that turkeys fed a ration based on "daily nutrient intake" were ready for market from three to five weeks earlier than birds fed on a conventional ration. (Feedstuffs, March 18, page 1.)

Dr. Thayer and his assistant Kenneth Dunklegod, a graduate student at Oklahoma State, said the results were based on an Arkansas field test involving 75,000 turkeys. He also reported on a similar test in Nebraska.

The Oklahoma State nutritionist outlined his report in a conference of feed and turkey men held here recently.

He said Broad Breasted Bronze hens fed the ration in the Arkansas test weighed 12 lb. in 16 weeks on 1.85 lb. of feed per pound of gain. And the toms in the same test weighed 24 lb. in 21 weeks on 2.25 lb. of feed per pound of gain.

The birds were ready for market from three to five weeks ahead of 50,000 birds on a conventional ration, he said.

Amino Acids Balanced

The formula is based on a high energy ration in which 18 amino acids are balanced instead of the five usually balanced in conventional rations.

Tracy Barrett, whose firm sponsored the meeting, said: "It looks like a really practical ration. The real test will come, of course, when it is fed to birds in commercial flocks under a variety of management conditions."

Dr. Thayer urged experimental use of the ration. He said a producer could do this by putting one lot of birds on the daily nutrient intake-based ration and another lot on his usual feed.

Sponsoring the conference with the Tracy Barrett Co. were the Clinton (Iowa) Corn Processing Co.; Diamond V Mills, Inc., Cedar Rapids, Iowa, and Stabilized Vitamins Co., Garfield, N.J.

Georgia Appointment

ATLANTA, GA. — Fred G. Coates has been appointed secretary-treasurer and manager of the Farmers Hatchery & Supply Co., according to Al Livers, president.

He has purchased the financial interest of William Martin, manager for the past eight years.

Mr. Coates was formerly manager of the Farm Supply Store, High Springs, Fla., and also was connected with the Poultry Health Service, Jacksonville.

NEW IDAHO FIRM

IDAHO FALLS, IDAHO — A new firm dealing in all types of livestock feeds and crop seeds, the Kirkbride & Goodwin Feed & Seed Co. here, opened its doors recently. Owners

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No. 7415—Corn Sheller

Introduction of the New Triumph 6-C corn sheller has been announced by the C. O. Bartlett & Snow Co. The firm points out that the sheller will be displayed for the first time in the company's booth at the National Feed Show May 7-10 in Chicago.

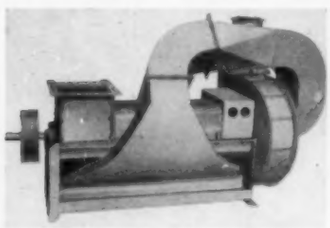
The new sheller, with capacities up to 750 bu. of ear corn per hour, is said to offer many field-proved, patented features previously available only in large machines, assuring efficient, low cost operations under all service conditions.

A company spokesman stated that the newly designed, over-size cleaning unit extends the entire length of the shelling cylinder, greatly improving the cleaning action. A new concept in air control — the Breather Hood — eliminates reverse air currents in the shelled corn hopper and balances air drawn by the cleaner, avoiding tendency for air to remove the shelled corn with the cobs and shucks, assuring maximum shellout.

It is said that even the smallest particles of cobs and shucks are blown away, leaving thoroughly cleaned, readily marketable corn. A fully accessible screen completely surrounds the cylinder, giving greater effective screen area. Two sets of Triumph's curved comb bars control the movement of the corn through the shelling area minimizing corn loss.

A 25 h.p. motor provides power for shelling, cleaning, and discharge of cobs and shucks. When desired, the clean, shelled corn can be discharged to the elevator with a collecting screw mounted in the base of the sheller. The new 6-C shellers are 4 ft. 9½ in. high, 8 ft. 3 in. long and 3 ft. 2¾ in. wide.

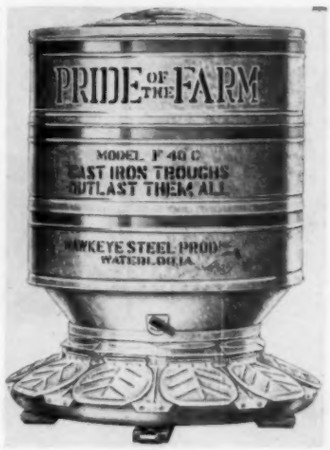
For additional information, check No. 7415 on the coupon and mail.



No. 7413—Hog Feeder

Hawkeye Steel Products, Inc., has announced the introduction of a 40 bu. hog feeder with "Adjustomatic" feed flow that permits setting the feed flow in seconds from the side of the feeder.

The Model F40C hog feeder, described as a saver of feed, is constructed with 10 large feeding doors set far apart for easy feeding. It has a solid cast iron trough guaranteed to last a life-time. A new "Feed-Miser" trough lip prevents pigs from rooting feed from the trough. Heavy gauge galvanized steel doors on the trough are said to be weather proof and rodent proof.



Hopper sections of the new feeder are of heavy galvanized steel with rolled edges beaded for maximum strength. Extra hopper sections, called "Plus Ten" sections, are also available. The addition of a "Plus Ten" section to the Model F40C feeder is said to easily and inexpensively convert it to a 50 bu. feeder.

The hopper on the F40C is equipped with an extra heavy galvanized cover with new cover hatch that opens with a turn of the wrist. This cover is mounted on slide hinges that allow full opening for easy filling and even distribution of feed in the hopper. Spring steel agitators bring any type of feed down into the trough and keep the feed flowing.

It is said that the Adjustomatic feed flow on the Model F40C can be set in seconds with an easy-to-reach lever on the side of the hopper. The operator can see exactly how much feed is coming into the trough while setting the Adjustomatic. After adjusting, the lever locks securely in place and stays set.

For additional information, check No. 7413 on the coupon and mail.

No. 7421—Mobile Pelleting Unit

New literature is now available on the truck-mounted feed pelleting machine developed by Daffin Manufacturing Division, Daffin Corp.

Called the Daffin Pelletmobile, this self-contained, pelleting plant on wheels is designed to operate on feeding areas being served by Daffin Feedmobiles — farm-to-farm truck-mounted bulk feed grinding-mixing-blending units—with custom processing routes superimposed on those of the mobile feed mills, or the Pelletmobile can be operated on an independent service basis, or a combination of both.

The Daffin Pelletmobile is mounted on its own 2-ton truck chassis and is powered by a 125 h.p. diesel power unit. The unit's pellet mill is an adaptation of the heart of the Daffin Pellet-Pak, a pelleting unit for permanent installations.

The Pelletmobile can produce up to 8 tons per hour of pellets made from ground ingredients, and up to 4 tons per hour of pellets made from roughage, on location at any farm stop, the company says.

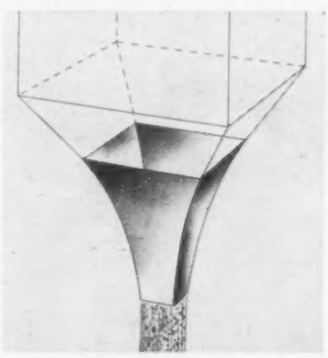
Elements of the standard Daffin Mixer-Blender are used in the Pelletmobile to moisturize and otherwise condition ingredients to be pelleted. A system of flow-limiting augers feeds a constant, uniform supply of material to the pelleter which in turn is equipped with a rotating pellet discharge table. A scalping device salvages "fines" from the pelleting operation and returns loose material to the surge bin for reprocessing.

For additional information, check No. 7421 on the coupon and mail.

No. 7414—Bin Flow Device

Development of a new device to provide full and uniform flow of granular and lump bulk materials from bins, hoppers and silos has been announced by the Bin-Dicator Co.

The Bin-Dicator Hyperbolic Outlet is said to eliminate bridging, ratholing and erratic flow of granular or lumpy material. It is described as particularly effective in handling various materials, including feed materials, that tend to pack and bridge in conventional outlets.



A company spokesman says that the unit's formulated design reduces the restriction to flow and increases the force responsible for flow through outlet.

Not an attachment, the Hyperbolic outlet replaces the lower section of a conventional hopper and becomes an integral part of the bin. It eliminates the need for vibrators and other attachments presently used to increase flow of bulk materials from storage bins, the company claims. It is said to be maintenance free.

For details on this new product, check No. 7414 on the coupon and mail.

No. 7416—Coccidiosis Booklet

A booklet containing natural color views of the common kinds of coccidiosis in chickens has been announced by Dr. Salsbury's Laboratories.

The color photographs are superimposed upon a drawing of the digestive tract to show approximately where each species of coccidia causes lesions. The illustrations appear on

Send me information on the items marked:

- ☐ No. 7413—Hog Feeder
- ☐ No. 7414—Bin Flow Device
- ☐ No. 7415—Corn Sheller
- ☐ No. 7416—Coccidiosis Booklet
- ☐ No. 7417—Portable Unit
- ☐ No. 7419—Equipment Leasing
- ☐ No. 7420—Screw Conveyor Torque
- ☐ No. 7421—Mobile Pelleting Unit
- ☐ No. 7422—Feed Weighing Truck
- ☐ No. 7423—Batch Mixer
- ☐ No. 7424—Pellet Bins
- ☐ No. 7425—Feed Flavoring

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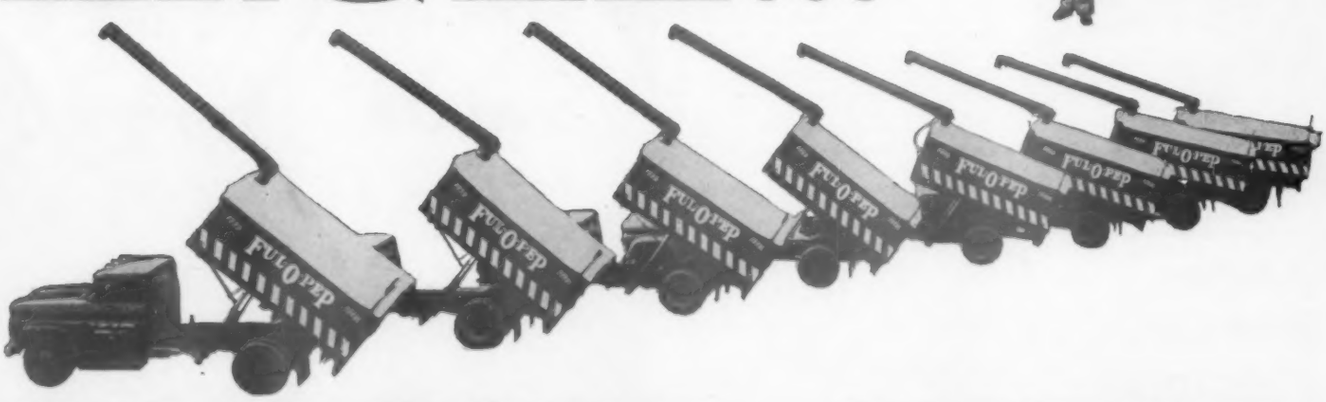

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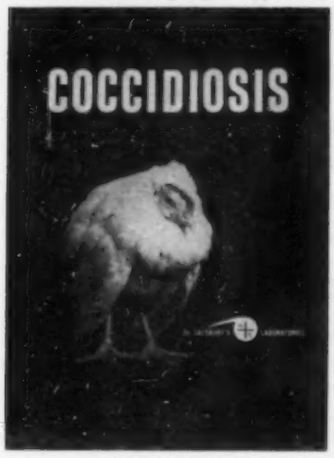

a double gate-fold page entitled "An Atlas of Coccidiosis."

The text of the 16-page publication gives helpful information on the spread of coccidiosis and how the common kinds affect chickens.

For a copy of this booklet, check No. 7416 on the coupon and mail.

No. 7419—Equipment Leasing, Financing

A new plan for leasing or financing Steinlite moisture testers and other grain testing, grading and handling equipment, has been announced by Seedburo Equipment Co.

Under the new program, any order of $315 or more may be placed on a lease basis with lease terms from 12 to 36 months. All payments are said to be tax deductible and leases may be renewed when expired for 6% of the initial cost per year.

The financing plan, designed for purchases of $1,500 or more, provides for minimum down payment and convenient monthly installments.

Both plans are designed to offer the user whatever equipment he needs without depleting his working capital. Complete information on both plans may be secured by checking No. 7419 on the coupon and mailing.

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No. 7424—Pallet Bins

Information is now available on plywood pallet bins that are described as strong, durable and impact resistant, according to announcement by the Simpson Timber Co.

Constructed of ½ in. or ⅝ in. Simpson exterior plywood, the Simpson Husky Ply-Strap Pallet-Bin is supplied in fabricated parts consisting of an assembled pallet, four walls and four kiln dried corner posts. It is fastened together with steel straps and does not require nails, screws or bolts for assembly.

It is said to be easily collapsed and

reassembled through the simplified features of its strap system.

The new pallet-bin was initially designed for use by fruit, vegetable and nut growers, but with minor changes in design, these bins can be adapted for almost unlimited use in any industry.

For additional information, check No. 7424 on the coupon and mail.

No. 7423—Batch Mixer

H. C. Davis Sons' Manufacturing Co. has announced the availability of new literature on the firm's "Precision Mixer." The firm states that its batch mixer has been certified through chemists' analyses as being able to handle potent drugs as well as many different dry and liquid ingredients.

The firm reported results of tests in which accurate mixing was said to have been obtained in not more than 1½ minutes after the last ingredient went in. It was stated that some have put 13 batches per hour through the mixer. Installations in commercial feed mills and feedlots were mentioned.

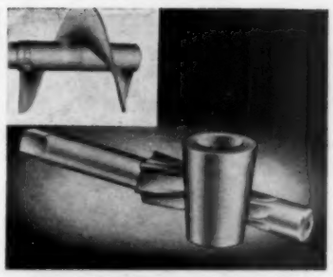
Mixer capacities were listed as being from 100 to 10,000 lb. per batch. To obtain the new literature, check No. 7423 on the coupon and mail.

No. 7420—Screw Conveyor Torque

Screw conveyor torque can be increased up to 100% by installation of Hercules tapered fasteners, according to announcement by the manufacturer, Sioux Products. Though formerly distributed only as a repair item for worn screw conveyor coupling connections, the fasteners are now being installed in new conveyors to improve the driving torque of the system, says the manufacturer.

It is said that Hercules fasteners provide complete protection against conveyor breakdown from coupling bolt failure due to wear. Installed with the proper Hercules Reamer, the company claims that these malleable fasteners make a constantly snug-fitting connection to prevent chatter and backlash in most screw conveyor systems. It points out that the fasteners absorb the wear and not the bolt.

Hercules fasteners make a 100%



flat-surfaced contact with bolt head and nut. All crevices are eliminated around the bolt and the connection is completely infestation-proof.

The fasteners are described as adaptable to most screw conveyor systems in a matter of hours, without disassembly. For use on mixing paddles or ribbon conveyors, the manufacturer recommends splitting one side of each Hercules fastener with a hacksaw. Compression on bolt, conveyor and gudgeon can be obtained in this manner.

The fasteners are supplied in a variety of sizes and materials to fit nearly all applications, as well as special bronze fasteners for Class 1, Group D installations.

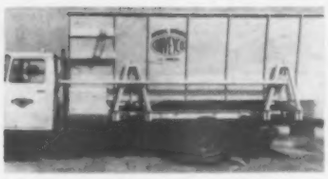
For additional information, check No. 7420 on the coupon and mail.

No. 7422—Feed Weighing Truck

A new Conveyco Mobil Weigh Feed Truck, designed and built for commercial cattle feedlots, and said to incorporate many improvements never before available, has been announced by the Conveyor Co.

The Mobil Weigh Feed Truck is equipped with a Howe 20,000 lb., double poise beam scale, which weighs in 5 lb. increments. The scale is sealed by the Bureau of Weights and Measures for certified accuracy.

Scale irons and levers are mounted



on the outside of the truck body which eliminates the problem of foreign material that would collect on hidden beams and affect the accuracy of the scale.

Outside scale mounting provides convenient inspection and minimum maintenance. Positive locks are provided to secure scale levers and beam which eliminate rattle and protect accuracy of scale.

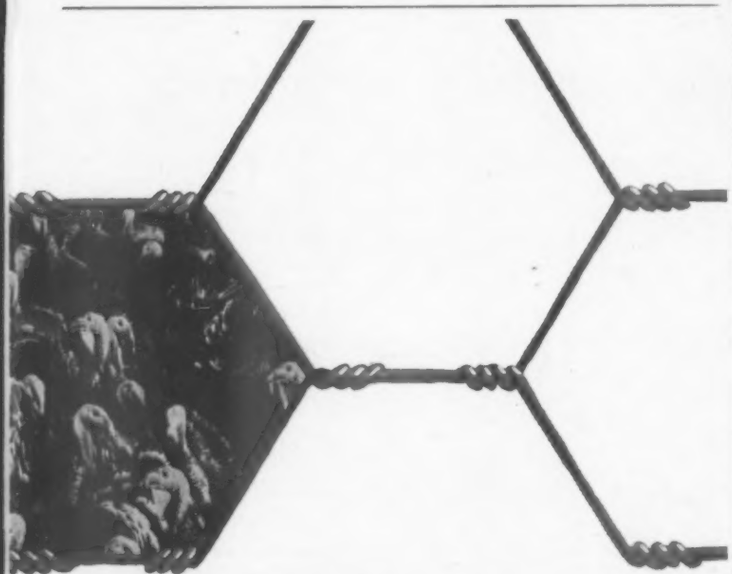
The Mobil Weigh Feed Truck is operated entirely from the cab. The scale beam with ticket printer is mounted in the cab enabling the driver to make a printed record of exact weights delivered to each feed manger.

The 470 cu. ft. capacity body has a completely sealed bottom to prevent feed loss in transit. The body is made of heavy gauge plate, reinforced with channel iron.

Use of heavy-duty all-steel S-188 drag chain conveyor, running the length of the feed body, and also for the cross drag chain discharge conveyor, eliminates belt type cross conveyor and the problem of slippage and belt maintenance, the firm says. The new type cross conveyor provides positive even flow of materials through the discharge chute on the operator's side of the truck.

A new hydraulic system provides a positive body lock, said to insure long life of truck scales and body. The truck is designed to achieve savings for commercial feedlots by reducing the number of round trips from the mill to the feed manger.

For additional information, check No. 7422 on the coupon and mail.



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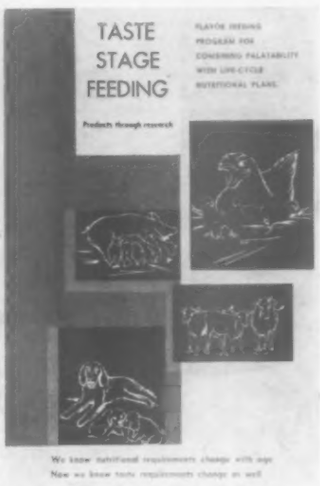
No. 7425—Feed Flavoring

A 16-page booklet entitled "Taste Stage Feeding" has been announced by the Flavor Corp. of America. The booklet tells how to scientifically use flavoring to make feeds that will taste good to animals and poultry.

The booklet describes college tested and approved flavors which assure a built-in taste stage flavor feeding program combining palatability with life-cycle nutrition plans.



For additional information, check No. 7425 on the coupon and mail.

No. 7417—Portable Pneumatic Unit

A new portable Airveyor unit for pneumatic transfer of whole grains, seeds, beans and similar granular materials is said to combine maximum capacity and portability by utilizing a combination vacuum-unloading, pressure-delivery system, according to announcement by the Fuller Co.

Fuller says that the portable transfer unit is the first to offer a positive pressure, constant displacement blower of high efficiencies, permitting the unit to propel a dense stream of material through relatively small ducts. The portable Airveyor is completely pre-assembled at the factory and delivered ready for action at the job site.

Its portability provides versatility of operation in transferring materials through a variety of storage, processing and distribution operations. This includes transfer in either direction between silo and truck or rail car, silo and warehouse, truck and rail car, and ship-to-shore, shore-to-ship.

According to Fuller, the unit delivers maximum capacity for a given pipe area and thus permits the use of minimum dimension nozzles, hoses and ducts, providing minimum weight and resulting increased portability.

The Airveyor transfer units are of the combination vacuum-pressure type, with the vacuum side picking up the material and the pressure side delivering it to the desired destination.

The new portable transfer unit is available for three standard pipe sizes, namely 3 in., 4 and 6 in. diameter. The 3 and 4 in. units use a single stage receiver followed by a scavenger tank to trap fines for easy disposal after each operation. For convenience, and because of the larger capacity, the 6 in. unit has a two-stage receiver. The second stage has a rotary lock to re-incorporate its catch with the main conveying stream.

Power for the transfer unit can be furnished by either internal combustion engine or an electric motor. For additional information, check No. 7417 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7373—Equipment for poultry, livestock, Fulton Co.

No. 7374—Portable belt conveyor, Finco, Inc.

No. 7375—Adjustable elbow, Huss & Schlieper.

No. 7376—Humidity guide, Seedburo Equipment Co.

No. 7377—Bale shredder, Jacobson Machine Works, Inc.

No. 7378—Equipment leasing study, Foundation for Management Research.

No. 7379—Weigh hopper for vertical mixers, Sprout, Waldron & Co., Inc.

No. 7380—Bulk feed body, FMC Bulk Transport Systems.

No. 7381—Bag top printer, Bemis Bro. Bag Co.

No. 7382—Bloat control treatment, Dr. Roberts Laboratories and Nicholas of America, Ltd.

No. 7383—Vibratory feeder, Eriez Manufacturing Co.

No. 7384—Poultry medication, The Merck Chemical Division of Merck & Co., Inc.

No. 7385—Nutrient level card, Peter Hand Foundation.

No. 7386—Displacement blower, Sutorbilt Corp.

No. 7387—Hanging feeder, Oakes Manufacturing Co.

No. 7388—Feed computer, Nutrena Feeds.

No. 7389—Insecticide, Dr. Salsbury's Laboratories.

No. 7390—Bag-type container, West Virginia Pulp & Paper Co.

No. 7391—Air conveying systems, Sprout, Waldron & Co., Inc.

No. 7392—Automatic hog feeding systems, Hawkeye Steel Products, Inc.

No. 7393—Hanging hopper for weighing, The Ferguson-Hanks Corp.

No. 7394—Bolted steel storage bins, Finco, Inc.

No. 7395—Antibiotics for swine, Merck & Co.

No. 7396—Turntable palletizing system, Standard Conveyor Co.

No. 7397—Collection of past-due accounts, U.S. Collection Assn.

No. 7398—Ventilating fan for poultry houses, Keen Manufacturing Corp.

No. 7399—Carload grain hopper scale, Cardinal Scale and Manufacturing Co.

No. 7400—All - purpose blender, Thomas Conveyor Co.

No. 7401—Sedimentation test kit, Seedburo Equipment Co.

No. 7402—Rear roll-out nests, the Fulton Co.

No. 7403—Control level switch, Hawkeye Steel Products, Inc.

No. 7404—Twin screw feedmobile mixer, Daffin Manufacturing Division, Daffin Corp.

No. 7405—Dehy comparison booklet, the National Alfalfa Dehydrating & Milling Co.

No. 7406—Caged layer folder, Babcock Poultry Farm, Inc.

No. 7407—Dual systems for mobile mills, Barnard & Leas Mfg. Co., Inc.

No. 7408—Antibiotic water medication, Dr. Salsbury's Laboratories.

No. 7409—Circular bunk feeder, Wyatt Manufacturing Co.

No. 7410—Filter Cleaning Service, Day Sales Co.

No. 7411—Molasses feed mixer, Sprout, Waldron & Co., Inc.

No. 7412—New grain equipment line, the Dempster Mill Manufacturing Co.

Mixed Feed Accounts for 30% of Concentrate Rations for Milk Cows

WASHINGTON — Commercially mixed dairy feeds accounted for 29.9% of the total 19,821,000 tons of concentrate ration fed to milk cows in the U.S. in 1960.

That was up from 28.5% of the previous year and second only to the figure for 1952, 30.3%, according to a U.S. Department of Agriculture report.

The mixed feed percentages varied from less than 10% in parts of the Midwest to more than 90% in New England.

USDA stated that of the total grain and concentrates fed to milk cows, 18,658,000 tons or 94% was fed on farms from which milk and cream were sold and 1,163,000 or 6% was fed on farms where milk was produced for home use only. Of the total grain and concentrates, 49% was fed to milk cows in the north central region. Wisconsin, with 2,604,000 tons, led all states in volume fed.

Other leading states were: New York, 1,523,000; Minnesota, 1,521,000; Pennsylvania, 1,120,000 tons; California, 1,051,000 tons, and Iowa, 1,013,000 tons.

An average of 2,259 lb. of grain and concentrates was fed per milk cow on farms during the year. The quantity fed per cow averaged from 2,465 lb. in the north Atlantic region to 1,939 lb. in the south central.

Quantities fed per cow by states varied from 4,590 lb. in Florida, where considerable citrus pulp was fed, to 1,450 lb. in Wyoming. Figures for other states where farmers fed grain and concentrates at heavy rates included: New Jersey, 2,870 lb.; Rhode Island, 2,600; Connecticut, 2,570; Pennsylvania, 2,540, and California, 2,530.

Dairy reporters indicated that they fed a daily average of 7.76 lb. of grain and concentrates per milk cow during 1960. This rate in these better-than-average herds compares with the previous year's average of 7.53 lb. and the 1949-58 average of 6.50 lb.

Farmers fed an average of 32.2 lb. of grain and concentrates per hundredweight of milk produced in 1960. This compares with 31.8 lb. reported in 1959 and 31.6 in the two previous years.

USDA says that components of the ration show little change from a year earlier. Corn, oats and commercial mixed dairy feed continued to account for 84% of the components in the dairy ration fed milk cows in dairy reporters' herds. However, the decrease in the use of oats from 1959 was about offset by small gains in the proportions of corn and commercial mixed dairy feed. In 1960, the components included: corn, 35%; commercial dairy feed, 30%; oats, 19%; barley and wheat millfeeds, 3% each; soybeans and soybean meal, 2%; cottonseed meal and linseed meal, 1%, and other kinds, 6%. Corn and oats accounted for 81% of the dairy ration in the east north central region.

Comercial mixed dairy feed made up 63% of the ration in the West and 58% in the north Atlantic region. Commercial dairy feed and corn were the leading components in the rations for cows in the south.

In 1960, homegrown feeds made up 50% of the total grain and concentrates fed milk cows in herds kept by dairy reporters.

The value of rations changed little. Value of grain and concentrates fed to milk cows averaged $2.88 cwt. in 1960, down 1% from the annual average of $2.89 in each of the two preceding years.

TABLE 1. Grain and Other Concentrates Fed to Milk Cows on Farms Where Milk or Cream Was Sold and on Farms Where Milk Was Produced for Home Use Only, by States, 1960*

State and division	On farms where milk or cream was sold: Fed, 100 lb. milk lb.	On farms where milk or cream was sold: Fed per cow lb.	On farms where milk or cream was sold: Total fed 1,000 tons	On farms where milk was produced for home use only: Fed per cow lb.	On farms where milk was produced for home use only: Total fed 1,000 tons	On all farms where milk was produced: Fed per cow lb.	On all farms where milk was produced: Total fed 1,000 tons
Maine	32	2,410	106	1,550	6	2,350	112
New Hampshire	28	2,090	51	1,440	1	2,060	52
Vermont	30	2,230	285	1,450	2	2,220	287
Massachusetts	30	2,470	113	1,520	2	2,450	115
Rhode Island	30	2,500	19	1,460	1	2,600	20
Connecticut	31	2,600	112	1,650	2	2,570	114
New York	30	2,450	1,514	1,500	9	2,440	1,523
New Jersey	32	2,900	187	1,640	3	2,870	190
Pennsylvania	33	2,570	1,096	1,590	24	2,540	1,120
North Atlantic	31.1	2,485	3,483	1,587	50	2,465	3,533
Ohio	33	2,520	835	1,740	25	2,490	860
Indiana	33	2,430	503	1,710	15	2,400	518
Illinois	32	2,380	638	1,600	20	2,350	658
Michigan	31	2,480	775	1,670	13	2,460	788
Wisconsin	29	2,410	2,599	1,450	5	2,410	2,604
E. N. Central	30.6	2,435	5,350	1,667	78	2,419	5,428
Minnesota	30	2,410	1,514	1,710	7	2,400	1,521
Iowa	34	2,400	990	1,760	23	2,380	1,013
Missouri	36	2,060	617	1,540	45	2,010	662
North Dakota	30	1,890	247	1,400	7	1,870	254
South Dakota	30	1,720	204	1,330	8	1,710	212
Nebraska	31	1,870	291	1,390	11	1,850	302
Kansas	34	1,990	307	1,510	16	1,960	323
W. N. Central	32.0	2,195	4,170	1,546	117	2,170	4,287
Delaware	34	2,480	31	1,590	2	2,410	33
Maryland	33	2,370	242	1,480	9	2,310	251
Virginia	31	1,970	268	1,290	44	1,840	312
West Virginia	30	1,580	81	1,160	16	1,490	97
North Carolina	37	2,340	203	1,540	78	2,040	281
South Carolina	43	2,330	79	1,550	32	2,040	111
Georgia	47	2,450	158	1,560	64	2,100	222
Florida	70	4,930	424	2,040	24	4,590	448
South Atlantic	40.9	2,592	1,486	1,499	269	2,332	1,755
Kentucky	37	1,890	388	1,370	62	1,800	450
Tennessee	38	1,790	348	1,350	65	1,700	413
Alabama	50	2,210	148	1,540	84	1,910	232
Mississippi	50	1,880	217	1,310	89	1,670	306
Arkansas	45	2,020	154	1,450	45	1,860	199
Louisiana	48	1,970	146	1,230	51	1,700	197
Oklahoma	42	2,440	256	1,690	39	2,300	295
Texas	48	2,630	545	1,850	149	2,410	694
South Central	43.3	2,108	2,202	1,489	584	1,939	2,786
Montana	27	1,620	58	1,080	4	1,570	62
Idaho	21	1,730	168	1,160	4	1,710	172
Wyoming	24	1,530	20	1,040	2	1,450	22
Colorado	30	2,120	122	1,560	8	2,080	130
New Mexico	29	1,780	29	1,200	6	1,640	35
Arizona	25	2,360	54	1,350	3	2,280	57
Utah	23	1,880	83	1,210	4	1,830	87
Nevada	20	1,560	11	820	1	1,500	12
Washington	26	2,260	245	1,390	11	2,200	256
Oregon	26	1,870	141	1,220	7	1,820	148
California	26	2,560	1,036	1,440	15	2,530	2,032
Western	25.5	2,229	1,967	1,290	65	2,179	2,032
U. S.	32.2	2,333	18,658	1,499	1,163	2,259	19,821

*Includes grain, millfeeds and other concentrates. Estimates are not entirely comparable with those for 1959 and earlier years.

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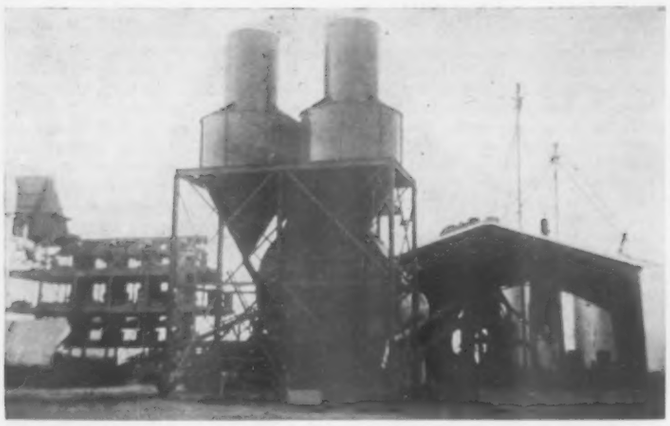
TABLE 2. Individual Feeds as Percentage of the Total Concentrate Ration Fed to Milk Cows in Herds Kept by Dairy Reporters, by States, 1960*

State and division	Corn	Small grains: Oats	Small grains: Barley	Small grains: Wheat	Oil seeds and oil seed meals: Cottonseed meal	Oil seeds and oil seed meals: Cottonseed	Oil seeds and oil seed meals: Linseed meal	Oil seeds and oil seed meals: Soybeans or S.B. meal	Other millfeeds: Gluten feed or meal	Other millfeeds: Wht. bran, shorts	Commercial mixed feed	Misc. other
Maine	1	2	..	..	..	..	..	..	..	..	93	4
N. Hampshire	..	..	..	..	..	..	..	..	..	..	97	3
Vermont	1	2	..	..	..	..	..	..	..	..	95	2
Massachusetts	..	..	..	..	..	..	..	..	..	..	90	10
Connecticut	1	1	..	..	..	..	..	..	1	..	88	9
New York	9	17	1	..	..	..	..	1	1	2	61	8
New Jersey	23	7	3	1	..	..	..	3	..	2	48	13
Pennsylvania	33	18	2	1	..	..	..	3	1	2	33	7
N. Atl.	15.7	13.7	1.2	.4	..	..	..	1.5	.8	1.6	57.7	7.4
Ohio	61	21	1	1	..	..	1	3	..	1	8	3
Indiana	66	18	..	..	..	..	..	3	..	1	10	2
Illinois	61	25	..	..	..	..	..	3	..	2	7	2
Michigan	55	30	2	..	..	..	..	4	..	1	5	3
Wisconsin	43	35	1	..	..	..	3	7	..	4	8	4
E. N. Cent.	51.9	29.3	.9	.2	..	..	1.6	2.6	..	2.6	7.6	3.3
Minnesota	55	32	1	..	..	..	..	3	..	2	6	1
Iowa	68	21	..	..	..	..	1	2	..	1	6	1
Missouri	38	5	4	..	1	..	..	3	..	8	37	4
N. Dak.	5	72	17	..	..	..	..	1	..	..	2	3
S. Dak.	32	55	6	..	..	..	..	1	..	..	3	3
Nebraska	54	12	3	..	..	..	..	2	..	1	16	12
Kansas	29	6	8	1	1	..	..	4	..	5	14	32
W. N. Cent.	49.5	25.6	3.1	.1	.2	..	.2	2.5	..	2.6	11.5	4.7
Delaware	47	14	8	..	..	..	..	1	1	1	23	5
Maryland	39	13	7	..	1	..	1	4	..	4	25	6
Virginia	32	8	9	2	1	2	..	3	..	2	39	2
W. Virginia	26	11	4	2	..	..	..	1	1	1	50	4
N. Carolina	28	10	4	1	3	2	1	2	..	7	38	4
S. Carolina	26	12	1	..	5	3	..	1	..	..	46	6
Georgia	30	8	1	..	4	2	..	1	..	2	49	3
Florida	8	1	..	..	1	1	..	2	..	1	85	51
S. Atl.	25.2	7.6	3.9	.6	1.7	1.3	.3	2.3	.1	2.5	37.1	17.4
Kentucky	68	3	2	..	1	..	..	6	..	3	16	1
Tennessee	58	6	1	1	3	1	..	3	..	2	23	2
Alabama	43	6	..	..	8	5	..	1	..	3	33	1
Mississippi	49	4	..	..	10	5	..	6	1	1	23	1
Arkansas	19	2	..	..	3	1	..	1	..	9	61	4
Louisiana	16	2	..	..	5	2	..	3	..	3	62	7
Oklahoma	6	13	11	..	3	1	..	1	1	7	46	11
Texas	10	5	..	..	5	2	..	..	..	6	61	11
S. Central	34.4	5.3	1.8	.1	4.3	1.8	..	2.6	.2	4.3	39.8	5.4
Montana	2	25	52	2	1	..	..	1	..	2	9	6
Idaho	2	26	20	6	..	..	..	..	..	3	19	24
Wyoming	3	18	57	..	1	..	..	1	..	3	13	4
Colorado	21	10	23	1	1	..	..	1	..	2	27	14
Arizona	..	..	1	..	..	2	..	..	..	..	90	7
Utah	1	6	54	5	1	..	..	..	..	4	23	6
Washington	1	5	2	..	..	..	..	..	..	3	85	4
Oregon	..	10	6	1	..	..	1	..	..	4	77	1
California	2	1	5	1	1	2	1	..	..	4	74	8
Western	3.0	5.9	11.0	1.5	.8	.6	1.6	.6	..	3.5	63.4	8.6
U. S.	35.2	18.5	2.8	.3	.8	.4	.7	2.2	.2	2.7	29.9	6.3

*Based on reports of rations fed on May 1 and Nov. 1. Several minor states not shown separately are included in regional and U.S. averages.



DELTA DEHYDRATING PLANT—An over-all view of the Delta Dehydrating Corp. plant at Clarksburg, Cal., is shown here. The big dust collectors and fan housing are in the foreground. In the left background are the beet pulp presses.

Run Beet Pulp, Alfalfa Dehydrating Operation

CLARKSBURG, CAL.—An unusual organization—because it dehydrates beet pulp as well as alfalfa and does both jobs with the same machinery—has been operating here for several months.

The firm is the Delta Dehydrating Corp. The president is Harvey McDougal, well known as one of the West's largest cattle feeders. The vice president is Jerry Fielder of Dixon Dryer Co., who is president of the American Dehydrators Assn. Bob Taylor, production manager of Dixon Dryer, is a director of the corporation.

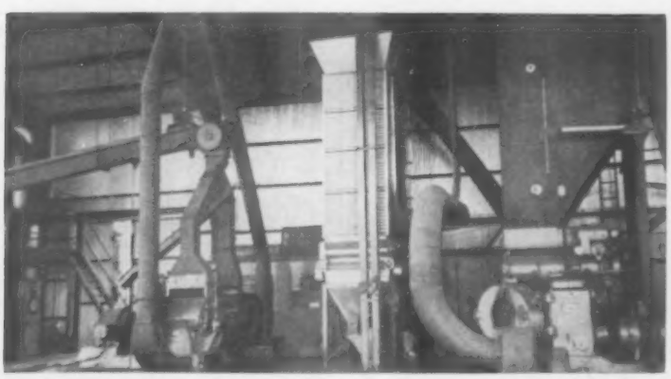
Dixon Dryer markets the dehydrated alfalfa produced here, and the same organization, under the name of Delta Dehydrator, sells the processed, dried beet pulp pellets.

Observers say that size and efficiency of the plant, as well as the combination of beet pulp and alfalfa dehydrating, are major features.

How It Works

The dryer is located on the property of the American Crystal Sugar Co., by the Sacramento River. The beet pulp comes directly from the sugar mill, goes through the big dehydrator, is pelleted and is put into storage bins. During the sugar beet "campaign," the dehydrator works 24 hours a day, seven days a week.

The alfalfa comes from adjacent fields. It is chopped into huge truck and trailer rigs, which then mount a specially designed ramp, side deliver their loads into a square concrete pit and proceed down the far side of the ramp. The chopped alfalfa is picked up by a screw conveyor at the bottom of the pit, transferred to a rubber belt, and taken to the forage feeder. From there the material is conveyed to the Stearn-Rogers dryer, a big cylinder with an 8-ton-per-hour capacity. The rotary dryer is operated on natural gas. The furnace develops 95 million BTU's per hour, with 1300° heat in the front and 300° in the far end. The thermal factors are electronically controlled. A 150 h.p. fan sucks the alfalfa through the drum, and



PROCESSING EQUIPMENT—Equipment at the Delta Dehydrating Corp. plant in Clarksburg, Cal., is pictured here. On the left side are hammermills; center, pellet cooler; right, two 200-h.p. California pellet mills.

DEHYDRATING EQUIPMENT—Here's a side view of the big dehydrator and forage feeder at the Delta Dehydrating Corp. plant in Clarksburg, Cal.

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From the furnace, the dried alfalfa is transported to two Gruendler hammermills. After grinding, it goes to surge tanks above the two 200 h.p. California pellet mills. The pellets are sucked into a vertical cooler, from where a bucket elevator takes them over shaker screens. The cooled pellets go into an automatic Richardson batch scale. Here, production can be checked by the hour and by the day, and this also provides a means of determining payment for farmers' alfalfa.

A drag conveys the pellets to overhead truckloading bins or on into storage facilities. The storage consists of eight bins equipped with inert gas. Total storage capacity is 10,000 tons.

Two-Man Operation

Charles Harris, resident manager, points out that the plant is operated at full capacity with two men. A big "control console" is arranged in front of the many switch boxes. A simple, but effective, flow diagram is provided with the many push buttons, and officials say that even a novice could operate the machinery.

Steel fabrication and layout work were done by Jack Crews of Los Angeles and millwright work by Ernest Kruse of Woodland.

May Tighten Up on N.Y. Egg Weight Law

ALBANY, N.Y. — The New York Bureau of Weights and Measures is considering the possibility of enforcing to the letter a state law which requires that each individual egg in a dozen must meet minimum weight requirements.

Normally the bureau checks the weights of eggs by the carton, Robert H. Hurley, director, said, and he added that he "would look into the possibility of weighing eggs individually."

Jack J. Raifman, a representative of Inter-County Farmers Assn., Woodridge, N.Y., accused the bureau's staff of allowing out-of-state distributors to violate the law by weighing eggs in the carton, rather than individually.

Mr. Raifman cited two examples of malpractice.

"One," he said, "was the practice of using egg safety cartons instead of self-locking cartons. The safety carton weighs more than the self-locking one."

Another, he pointed out, involves balancing out the weight of the eggs in the dozen so that the total weight meets the requirement for the dozen.

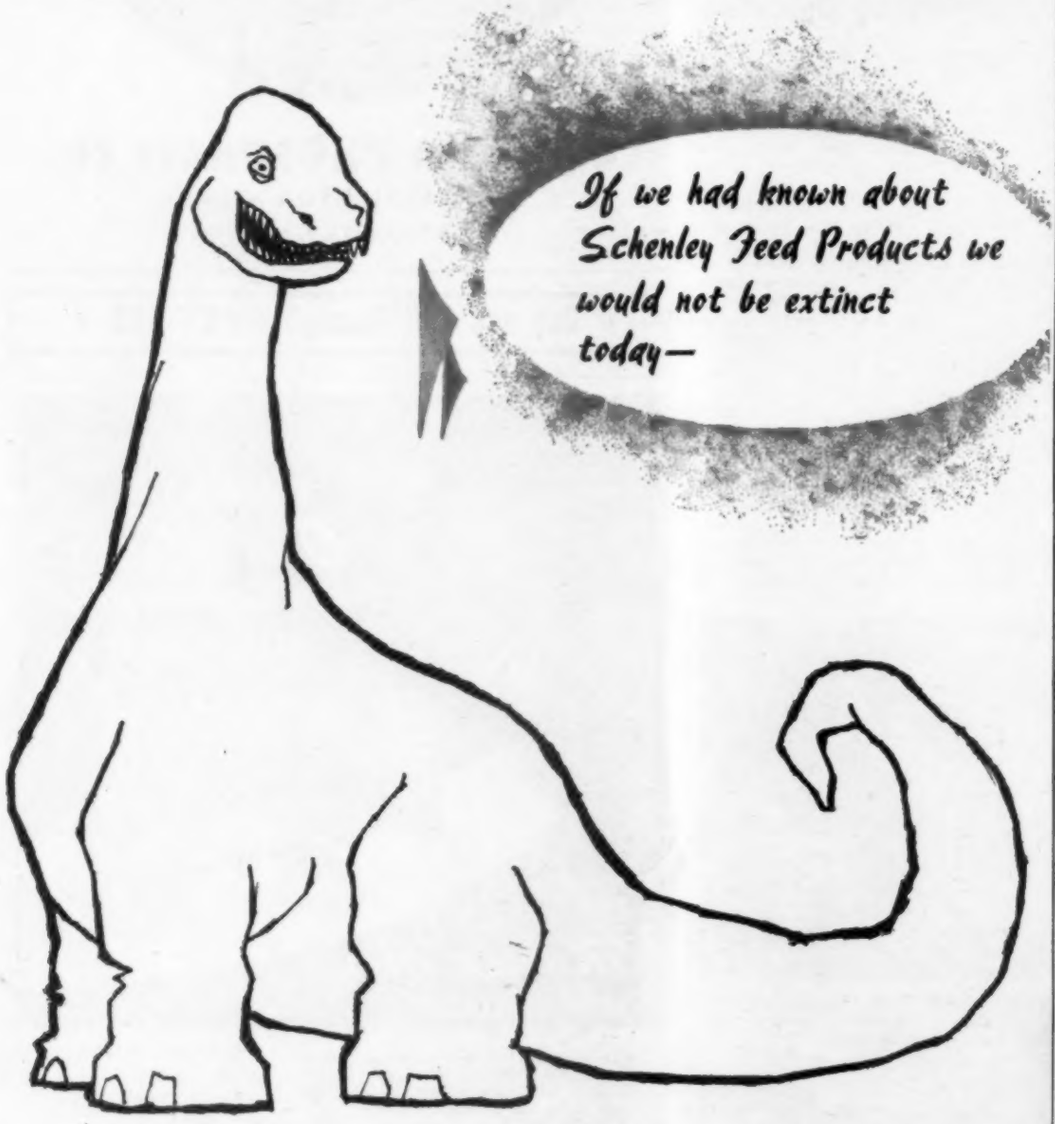
Using large eggs as an example, which by law must weigh 24 to 27 oz., he stated that suppliers commonly pack a dozen eggs composed of both undersize and oversize eggs, thus balancing the total weight.

Minnesota Nutrition Conference Announced

ST. PAUL—The Minnesota Nutrition Conference for Feed Manufacturers will be held in Peters Hall on the St. Paul campus of the University of Minnesota Sept. 11-12.

The conference was formerly known as the Animal Nutrition Short Course, said J. O. Christianson, director of short courses on the St. Paul campus, in announcing the dates for the 22nd annual event.

Dr. Lester Hanson, head, animal husbandry department, University of Minnesota, states that the program for the conference is now being planned by a committee consisting of representatives of the Northwest Feed Manufacturers Assn. and staff members of the university interested in animal nutrition.



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20 4-H Scholarships Awarded by Pfizer

LAFAYETTE, IND.—Twenty young college men and women from throughout the nation have been awarded 4-H scholarships by Chas. Pfizer & Co., Inc., it has been announced.

Central region winners, who traveled to Purdue University here as guests of Pfizer, received their awards during the annual conference on extension training, the announcement said. Some 75 college administrative and extension representatives from land grant institutions throughout the country were present for the program, it was stated.

The Pfizer awards were announced by Herbert L. Schaller, manager of public relations, Agricultural Division, Chas. Pfizer & Co., Inc.

He commented that this marked the sixth consecutive year that Pfizer has presented scholarships to outstanding 4-H students, all of whom are presently enrolled as juniors in agricultural colleges and universities. The awards were established to encourage young people to seek careers in agricultural extension work, he added.

Recipients this year are from 16 states. They are: Brenda Jo Upton, Jasper, Ark., University of Arkansas; Charles F. Dvorak, Jr., Willimantic, Conn., University of Connecticut; La Dessa K. Rogers, Moscow, Idaho, University of Idaho; Margaret Ann Williams, Stockton, Ill., University of Illinois; Karen Deitchler, Hastings, Iowa, and Larry Hiller, Morning Sun, Iowa, Iowa State University; Melinda J. Herflicker, Toms River, N.J., and Marilyn S. Ziegler, Morenci, Mich., Michigan State University.

Also: Phyllis S. Skinner, Grafton, Neb., University of Nebraska; Gordon L. Peck, Elnora, N.Y., and Patricia A. Dunn, Delmar, N.Y., Cornell University; L. Joanna Powell, Mt. Holly, N.C., University of North Carolina; Marie McKinzie, Douglas, N.D., North Dakota Agricultural College; Ken Schneeberger, Walters, Okla., and Martha J. Tarpey, Stillwater, Okla., Oklahoma State University; Don Walls, Hermiston, Ore., Oregon State College; Barbara H. Sherman, Centredale, R.I., University of Rhode Island; Alice Ruth Joyce, Winchester, Tenn., and Barbara Sue Corbett, New Market, Tenn., University of Tennessee, and Melvin C. Young, Lockhart, Texas, Texas A&M College System.

To qualify for an award, the student must have an outstanding scholastic record and be enrolled in courses that will lead to an extension career, Mr. Schaller said. Each student is required to submit as a part of the application a teaching plan for a program in animal health or an application of such a program that will be of benefit to human health.

Doughboy Industries to Offer Common Stock

NEW RICHMOND, WIS.—Doughboy Industries, Inc., here plans to offer publicly 100,000 shares of common stock, with the price of the shares to be announced later, it was disclosed.

A group headed by Kalman & Co., Inc., St. Paul, is to head the underwriting, and a registration statement has been filed with the Securities and Exchange Commission in Washington, D.C.

Doughboy Industries has a diversified product line, including livestock and poultry feeds.

Mill May Give Way to Area Redevelopment

BUFFALO, N.Y.—A new Urban Renewal Administration policy on land acquisition improves the chances for demolition this summer of the fire-damaged and unused Harper Feed Mill at the foot of Erie St. here. William F. Denne, executive director of the board of redevelopment, expressed this opinion.

The six-story structure is between the Marine Drive apartments and Lake Erie, within the waterfront project redevelopment area.

He said regional URA officials have promised to consider the city's request for acquisition of the feed mill property in advance of full-scale purchases in the waterfront area. He added that the new URA policy, designed to speed land acquisition, fits the local case.

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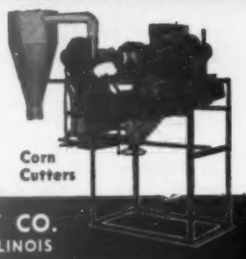

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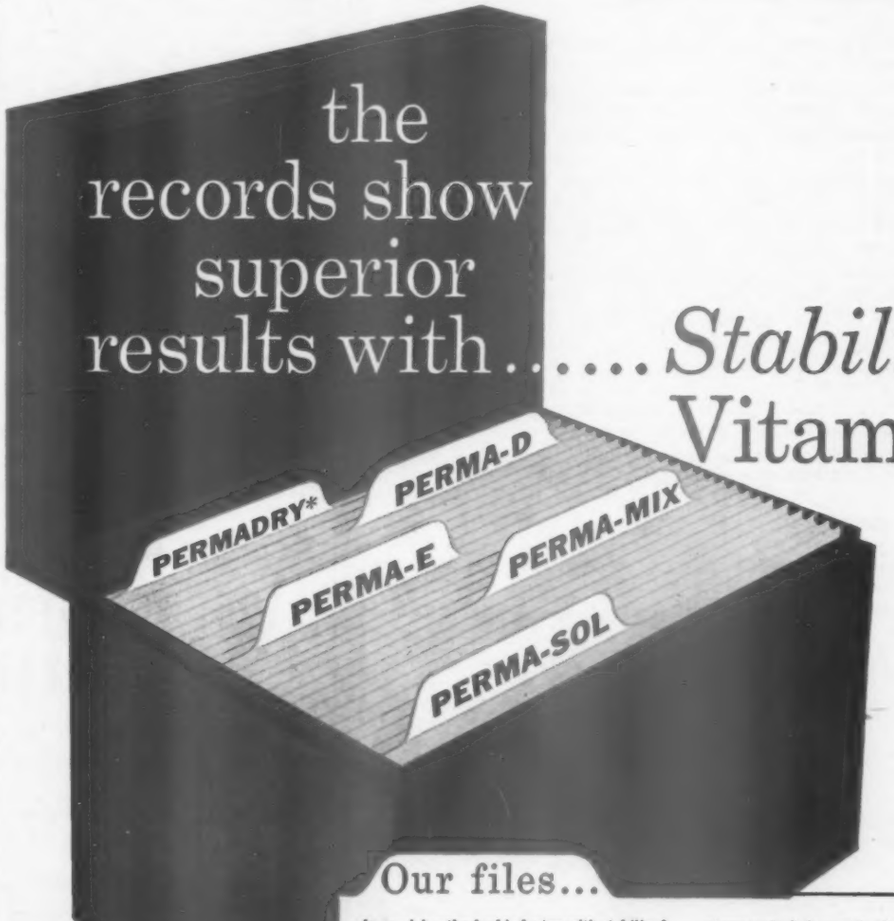

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Final Report of GFDNA Forum on FDA Rules Concludes Series of Questions and Answers

EDITOR'S NOTE: *The following questions and answers from a forum conducted during the recent Grain & Feed Dealers National Assn. convention in Washington concludes Feedstuffs' series of reports covering a transcript of the proceedings dealing with Food and Drug Administration regulations and how they affect the feed industry.*

Other excerpts from the forum transcript appeared in the April 8 and 15 issues of Feedstuffs.

Answers are those given by J. Kenneth Kirk, assistant to FDA's commissioner, George P. Larrick; William W. Goodrich, chief of FDA's general counsel office, and Ralph Kneeland, Jr., chief of the FDA food branch bureau of enforcement.

v v

Question: How can FDA, a division of public government, justify allowing a feed manufacturing firm which is using an additive on a given date to continue to use that additive and to refuse permission to another firm to use the same additive on the basis that he was not in business on that date? In other words, how can the same law apply differently to two different citizens?

Mr. Goodrich: This is a question that has been presented to me a great many times since the passage of the Food Additive Amendment. I do welcome the opportunity to explain how this comes about. It comes about not from the way we administer the law necessarily, but by the way Congress wrote the law.

First, let's start with what the Food Additive Amendment did. It said that any substance is a food additive if its intended use may result directly or indirectly in its becoming a component of food and if the substance is not generally recognized as safe. Excepted substances are those used in accordance with a prior sanction, granted under this statute or under the Meat Inspection Act.

There had been granted before the passage of the Food Additive Amendment a number of effective new drug applications on diethylstilbestrol, 3-nitro, the other arsenicals and so forth. Every one of those new drug applications was granted on an individual basis, taking into account the control procedures that would be exercised by the particular mixer, and we were not approving any further new drug applications or any applications for those substances without having assurance that the control procedures and labeling would be such so as to result in safe use.

Therefore, it became necessary for any new person who wanted to use diethylstilbestrol, 3-nitro, or anything else that was in the new drug category, to file an application for a new drug, setting forth his proposed use, his labeling and his control procedures. This proposal called for the use of diethylstilbestrol which, for one, was an ingredient in feed and was, by definition, "food."

The Word from Congress

Congress told us we could not approve the use of any substance in food that had been shown to produce cancer in man or animal. Diethylstilbestrol was such a substance, so we could not approve it.

This is how the situation came about. It is a typical situation involving the effect of a grandfather clause, and I'm sure you're all familiar with similar situations in which the Legislature says that things approved up to a certain date are further approved, but no approv-

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als will be authorized unless certain showings are made. You will find it in medicine, law, everywhere else—truck driving, truck routes, railroad routes, TV stations, what have you.

Now, from where we sat, we were directed by Congress not to approve any new applications, and in interpreting whether a prior sanction had been granted we were dealing with an exception to an important public law, which under my legal teaching, it was to be strictly construed. It was strictly construed.

When the inequity of diethlystilbestrol in beef cattle was pointed up, we were the first to go to the Congress. Last year Secretary Flemming (former secretary of the Department of Health, Education and Welfare), proposed to the Congress that we have an amendment to the Delaney Clause which would provide for the use of a cancer-producing substance in the feed of animals with two provisos, that it didn't injure the animal and it didn't result in any residues. We supported that before the Committee by both scientific and administration witnesses. It got lost in the shuffle of the fight over the Delaney Clause in the Color Additive Bill and the committee didn't approve it. That's where it is today.

As Mr. Larrick (George P., FDA commissioner) has said the department has not yet proposed a reintroduction of such legislation, and we're hopeful that the industry will take the lead there. The department, I believe, will support such legislation but we will not support any legislation which results in a residue of a cancer producer in food until someone tells us how to fix a safe level for it.

Question: When a feed man has his entire success at stake based on the results of his feeder customers, isn't it reasonable to assume that he will see that the farmer follows directions in feeding drug-containing feeds and that he will prepare them properly himself without having the federal arm of the law standing over him?

Mr. Kneeland: I think that's a reasonable assumption. That's one that we have followed for many years in all enforcement activities. In general, manufacturers want to comply with the law. And I think it is reasonable to assume that they are going to make an effort.

We have, however, a regulatory responsibility to see that the law is met and know that there unquestionably are a few in any industry that get out of line. That's the purpose of our regulatory program. The fact that a law applies to a firm doesn't necessarily mean that Food and Drug thinks that everybody is going to violate that law. We don't operate under that assumption.

Question: Why is no tolerance allowed in the so-called "safe usage" of drugs and feeds when the many commonly consumed feed products, ranging from alcohol to table salt, are toxic when consumed in excessive amounts? Iodine, for example, is more toxic than many drugs requiring an NDA. Why cannot reasonable tolerances be permitted when they are known to be safe?

Mr. Kirk: I'm not sure I understand the question because I don't know of any new drugs which are permitted in feeds where we haven't set a tolerance.

Now with reference to iodine, perhaps the inquirer overlooked the fact that we recently published in our "generally recognized as safe" list of trace minerals for animal feeds quite a number of iodine compounds which may be used and may be generally recognized as safe in accordance with good feeding practice. Incidentally, when you go to human foods, potassium iodide is permitted in table salts to make iodized salt at a level of 0.01% of the salt.

Question: What does FDA consider adequate machinery for custom mixing using antibiotics in mixture?

Mr. Kneeland: I don't know how I happen to get all these questions. Again, I can't give you any specific answer to this question. The adequacy of the mixing machinery is, of course, considered in connection with any submission to us by people who have become familiar with the types of equipment that are available, and that's tied in with controls and other factors. The machinery ought to be adequate to do the job and a determination of that is really the responsibility of the man who uses the mixer.

Question: Since proper dosage, efficacy, toxicity and tissue residue hazards are contingent upon a thorough blending of the additive into the final mix, what are the required production standards for effective NDA's?

Mr. Kneeland: This question is essentially the same as the previous one on specifications for mixing equipment and for use of such equipment. We feel the manufacturer has got to assume the responsibility for having adequate equipment to do the job he sets out to do. The proof of that is going to rest in the sampling of the end-product, both by the manufacturer in his own control procedures and in the regulatory samples we collect from shipments that he makes. And that's going to be the final test of those things.

Question: Some grain cars are not cleaned out properly. Grain may be left behind the lining of the car and may harbor insects and contaminate the clean grain that's loaded in this car. How about a clean-up car regulation?

Mr. Goodrich: This is not new. The counsel for the Millers National Federation was in to see me about this same thing some time ago, asking what the group should do to require the railroads to deliver to millers cars that had been adequately cleaned and cleared of rodents. I called his attention to a provision in the Federal Food and Cosmetic Act. Section 703 says: "Carriers shall not be subject to the other provisions of this act by reason of their receipt, carriage, holding or delivery of food, drugs or cosmetics in the usual course of business as carriers."

This is pretty direct language, and it's kind of hard to get around. I asked the counsel for the Millers National Federation just what he would do about it. I told him that I could see the possibility of construing this very strictly in terms of exempting the carrier if he hauled a misbranded article that was already

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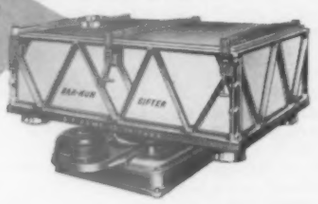

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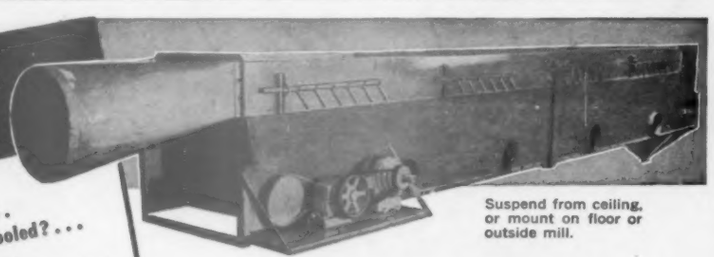

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misbranded when he got it, or if he hauled an adulterated product that was already adulterated when he got it. Then he wouldn't be responsible for introducing adulterated food into interstate commerce or receiving it in interstate commerce.

But I could see, also, the possibility of taking action where instead of being a carrier he is the cause of the original adulteration in such a case as you have presented.

Since we met sometime ago, we have been looking for these cases with the thought that where we can plainly prove it is the railroad's responsibility for delivering a car which actually resulted in adulteration, we will make a test case out of it. We have not found such a case that's entirely suitable.

Question: Suppose someone didn't agree with FDA and thought that the prior sanctions granted on diethylstilbestrol, for example, apply to everybody, and that even though he didn't have a specific new drug application approved prior to the passage of the Food Additive Amendment, he wants to test out the problem of whether he has a prior sanction.

Mr. Goodrich: What he would have to do would be to ship the drug or the mixed feed in defiance of the statute. He may contend that it was not in defiance, but as we interpret it it would be in violation.

We would then have the burden of proving that diethylstilbestrol, a food additive, is a substance the intended use of which may result directly or indirectly in being a component of food and for which there was no food additive regulation. The burden would then be on the claimant in a seizure case, if we brought a seizure case, or on the defendant in a criminal case or injunction case, if we brought a criminal or injunction case, to prove that he had a prior sanction.

That's where it becomes a little bit sticky, because he would have to come up and say the prior sanction granted to one manufacturer applies to another. It just doesn't apply, and he would have difficulty there.

But I think the question more directly was, "Can we expect to be prosecuted or the product seized?" I think you can expect both. I mean, we are serious about this and we didn't reach this decision lightly. It has been published in the Federal Register since May of 1959, I believe, and it is certainly well known throughout the industry how we feel about it.

At one time there was some indication that some distributors of diethylstilbestrol might try to sue for a declaratory type of order, but they did not. We have presented this matter back to the Congress, explaining what our interpretation is to the very committee that handled this and have asked them to deal with the problem. They have not done so, so I have every confidence that our interpretation is a sound one.

I also strongly believe that the best and quickest way out of this is to get Congress to look at it again in terms of what is entirely logical to your mind and to ours, too. It can be proved that where the susbtance doesn't hurt the animals, and where there's no resulting residues, then its use ought to be permitted to everyone. However, where there's a prior sanction outstanding which authorized something that would be illegal now (suppose you had someone with a residue of a substance that was there because of a prior sanction and it wasn't safe; he's allowed to use it only because he had a prior sanction) we should have an easier way to withdraw that than to have to shoulder the burden to prove that by clinical experience it's been proved to be unsafe.

That's our problem under the new drug withdrawal, and both of these problems were presented together by Secretary Flemming in the legislation we advocated at the last Congress.

Mr. Larrick has told you that this proposal has not been represented to Secretary Ribicoff but he has expressed, according to Mr. Larrick, the view that the initiative for this should come from industry.

'Grain Plan May Affect Livestock Only Slightly'

EAST LANSING, MICH.—Economists at Michigan State University here predict that the feed grain program likely will not have any major effect on livestock and milk production in the coming year if the price of corn stays near the dollar mark.

They say that the cash crop farmer probably stands to gain more from compliance in most cases than the livestock feeder or dairyman.

Farmers who rely on corn silage for a high percent of their feed will rarely benefit from the reduction program. Even though the cattleman or hog feeder who normally feeds his corn can buy it well below the support levels, he faces several problems, they say.

To be eligible for price supports on a crop, this farmer must provide storage and then delivery of the crop at "take-over" time. He also must transport his purchased feed and provide storage for it.

There is no indication from present interpretations of the law that a farmer may receive any of his own crop for "payment-in-kind" for his diverted acres.

Some observers believe that certain Michigan farmers may disregard the corn reduction program and shift to soybeans or dry beans.

The 1961 support price on soybeans on a national average will be $2.30 bu., up 45¢ from last year. The announced national average support rate on dry beans is $6.32 cwt. This will mean a support level on Michigan navy beans at something over $7 cwt.

There are no acreage restrictions for dry beans, but additional acreage for soybeans must come from land diverted from feed grains or wheat. In other words, farmers must have at least the same acreage in conserving crops or in idle land this year as in 1959-60 to be eligible for supports on the 1961 soybean crop.

California Grain Mill Worker Earnings Drop

SAN FRANCISCO—A three month rising trend in the average weekly earnings of production workers in California's grain mills was reversed in February when the rate dropped to its lowest point since last November.

The labor statistics division of the state Department of Industrial Relations reported that the work week of grain mill workers declined, while average hourly earnings remained almost constant. The workers were averaging $111 per week in February, compared to $114 in January, and $106 in February of 1960.

The average work week was 41 hours, compared to 42 the previous month, and 41½ in the same month of 1960. Average hourly earnings dropped 1¢ to $2.69, compared to $2.55 in February of 1960.

The $111 average weekly wage for grain mill workers compared to an average of $97 in California's nondurable goods industry, and $105 for manufacturing as a whole.

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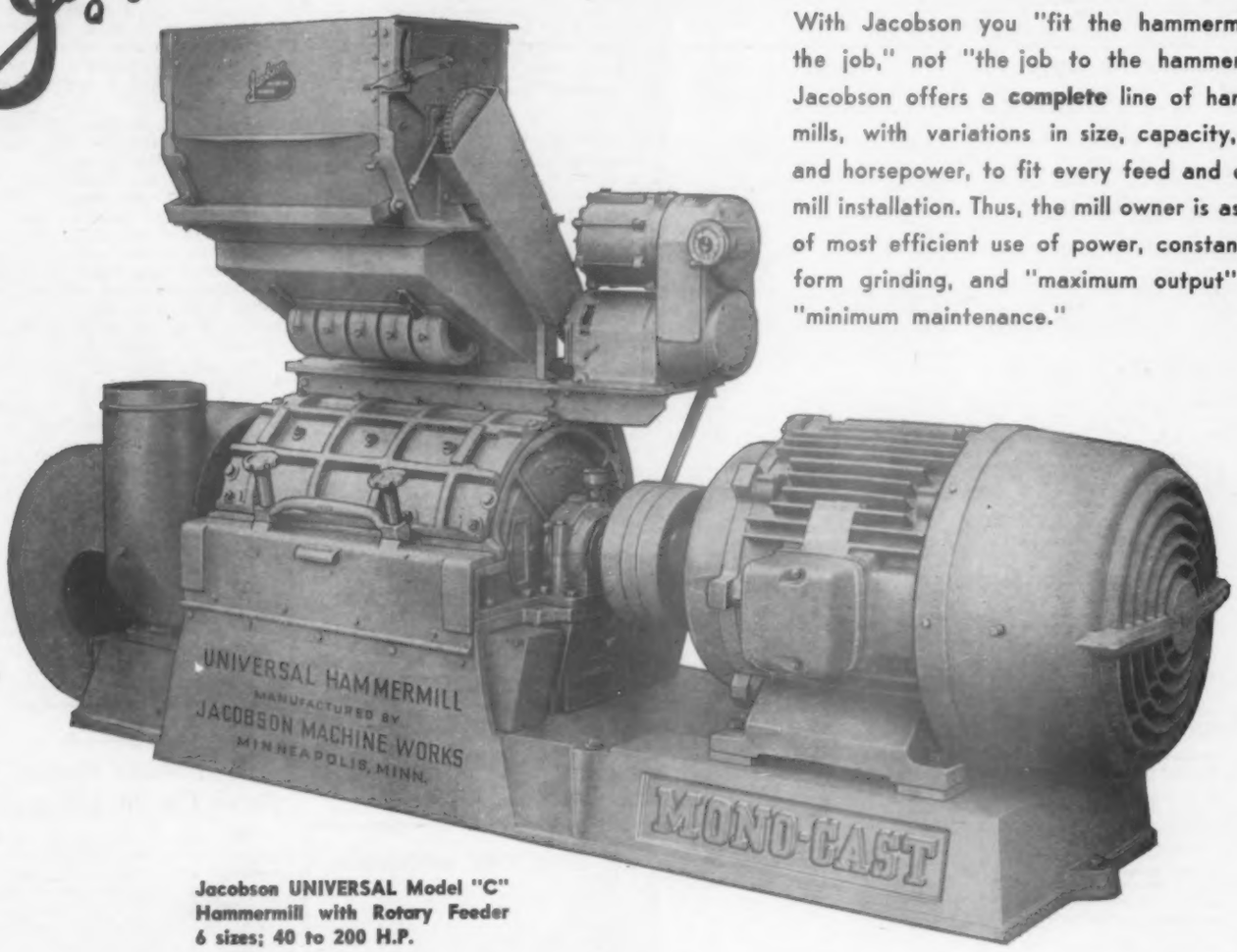

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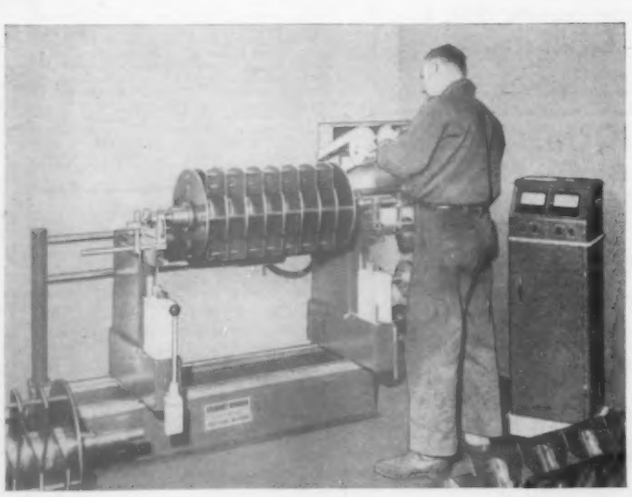

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Kansas Grain, Feed Dealers Event Set for April 27-29 in Wichita

WICHITA, KANSAS — The program for its 64th annual convention in Wichita has been announced by the Kansas Grain & Feed Dealers Assn.

Scheduled for April 27-29 in the Broadview Hotel here, the convention's first day will include convention registration, opening up of display exhibits and a late afternoon social hour.

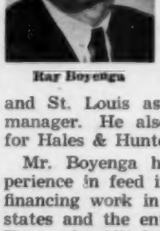
Topics to be discussed the second day include "Food and Drug Administration's Clean Grain Program"; "Activities of the Kansas Grain Inspection and Warehouse Department"; "Role of the Fertilizer Dealer," and "Insurance—Why, What and When?" Dr. James A McCain, president of Kansas State University, will speak at the noon luncheon and a social hour will climax the day's events. A special ladies program is planned.

The third day will open with a "Progress Report on the Kansas Grain Fumigation Safety Program." Other topics to be presented include "New Wheat Varieties and Their Effect on the Quality of Kansas Wheat"; "Labor Union Democracy—Fact or Fiction"; "A-S-K—A Sales Interest Talk"; "Activities of the Kansas City Commodity Office," and "Agricultural Stabilization and Conservation Problems."

The luncheon speaker will be Alvin E. Oliver, executive vice president of the Grain & Feed Dealers National Assn. The evening program will include a banquet, variety show and dancing. Convention ladies will be entertained at a musical program Saturday afternoon.

Allied Mills Names Area Credit Manager

CHICAGO — Appointment of Ray Boyenga as southern regional credit manager for Allied Mills, Inc., has been announced by L. M. Bolitho, secretary and credit manager of the firm.


Ray Boyenga

After spending some time with his father operating a grain elevator in northern Iowa, Mr. Boyenga spent several years with Ralston Purina Co. in Iowa Falls and St. Louis as order and credit manager. He also did credit work for Hales & Hunter in Georgia.

Mr. Boyenga has had broad experience in feed industry credit and financing work in many midwestern states and the entire South, east of Texas, the Allied announcement said. He will be in charge of Wayne Feed credit and finance programs in the southern region with headquarters at Gainesville, Ga., Mr. Bolitho said. He succeeds Don E. Burson, who has been promoted to district products manager at Gainesville.

Pet Food Institute To Convene Sept. 18-19

CHICAGO — The fourth annual convention of Pet Food Institute, national association of dog and cat food manufacturers, is scheduled for Monday and Tuesday, Sept. 18 and 19, at the Drake Hotel, Chicago. The general session will be preceded by board and committee meetings on Sunday, Sept. 17.

The Pet Food Institute represents by volume approximately 85% of dry dog food manufacturers, 65% of canned dog food manufacturers and 60% of cat food manufacturers, according to the institute.

California Utilities Group Sets Hearing On New Truck Rates

SAN FRANCISCO—The California Public Utilities Commission has announced its second series of hearings on the new distance table No. 5 affecting truck rates covering feed and grain products for April 25-27 in Los Angeles.

Shippers and trucking firms got their first chance to question the commission staff men who drew up the new tables at the opening hearings here earlier this month.

The new distance table changes the weighted, or "constructive mileages," between locations in the state. "Constructive mileage" is an artificial distance taking into account the actual distance plus such factors as grades, traffic congestion and tolls. Approved rates for common carriers and minimum rates for contract carriers are based upon the PUC distance table. Adoption of the new table would lead to an increase of some distances and a decrease of others, but grain industry spokesmen have expressed the fear that the cumulative effect would be a general rate increase without a formal PUC rate ruling.

Attending the first hearings in San Francisco were representatives of the San Francisco and Los Angeles grain exchanges, the California Hay, Grain & Feed Dealers Assn., the California Farm Bureau, the San Francisco and Los Angeles chambers of commerce, the California Trucking Assn., and other interested groups and individual firms. About 200 persons attended the opening sessions. The San Francisco exchange participated on behalf of the Stockton Grain Exchange.

Questions Answered

The early hearings are mainly concerned with making the complicated distance table clear to affected parties, according to reports. Eric Moore, commission staff member in charge of setting up the table, answered questions from the shippers and truckers and is scheduled to do so again at the Los Angeles hearings. PUC examiner William E. Turpen will preside over the April hearings in Los Angeles.

Because of the involved nature of the distance table, several months of hearings are anticipated. Later hearings have been scheduled for San Francisco beginning June 6 and in another location, to be announced, June 27.

The distance tables have been changed every 9 or 10 years since distance table No. 1 was issued. The present table, No. 4, is eight years old. Copies of the table were distributed to interested parties by the PUC some months ago.

The San Francisco Grain Exchange has suggested that the feed and grain industry engage legal assistance, if necessary, to protect its interests. The proposal was supported by the Stockton Grain Exchange.

"The Stockton Grain Exchange," said a resolution passed by the board of directors, "is greatly concerned with the implications of the above case and believes that this far reaching revision of the distance table can have profound effects on its membership. Therefore, the Stockton Grain Exchange urges the grain exchanges of Los Angeles and San Francisco, as well as the transportation committee of the California Hay, Grain & Feed Dealers Assn., to join actively in the study of this case."

Ask Greater Promotion Of Ag Product Exports

WASHINGTON — Cooperation of the National Renderers Assn. and 32 farm organizations for greater promotional programs for the export of farm products was asked by officials of these groups and the U.S. Department of Agriculture at a recent meeting in Washington.

The officials suggested that many of the organizations could benefit from the establishment of permanent foreign offices, and that the organizations should consider increasing their appropriations for export promotions. It was further suggested that the group set up a task force to work in connection with future programs.

Attending the meeting were Myer O. Sigal, president, and John J. Hamel, executive director of the National Renderers Assn., together with representatives from the 32 farm organizations.

John P. Duncan, assistant secretary of agriculture for marketing and foreign agriculture; Robert C. Tetro, acting administrator of Foreign Agricultural Service; Raymond Ioanes and Patrick O'Leary, assistants to Mr. Tetro, and M. A. Drisko, director to the livestock meat products division of Foreign Agricultural Service, represented the USDA at the meeting.

Currently, the USDA is working in cooperation with more than 40 organizations in more than 50 nations to expand farm product exports. Organization representatives pledged their assistance and support in planning and carrying out additional programs.

Packaging Company Formed in Des Moines

DES MOINES — Formation of a new packaging concern, Interstate Bag Co., has been announced by Marvin Pomerantz, president of the firm.

Mr. Pomerantz says the company will manufacture a complete line of multi-wall paper bags, burlap bags and containers for industry in a new plant under construction at 2201 Bell Avenue in Des Moines. Temporary offices of the firm are in the Bankers Trust Building and operations are under way, the company president said.

Associated with Mr. Pomerantz in the company are Leo Gebo of Des Moines and Mike Sandler of Minneapolis. Jack McIntyre and Lou Gonias, both of Des Moines, have joined the sales staff.

The announcement said that Mr. Pomerantz was chairman of the board and treasurer of Midwest Bag Co. before establishing Interstate Bag Co.

FARMERS' FINANCIAL POSITION IMPROVING

NEW YORK—Farm area bankers expect financial conditions for farmers and ranchers to continue to improve throughout 1961, according to a survey by the American Bankers Assn.

Bankers reported a continuing rise in volume and demand for farm credit in the past six months. Requests for loans to purchase livestock showed the largest increase, the ABA agricultural committee reported. The study, based on a survey of 1,000 banks, showed that deposits in those institutions currently are up 1% from six months earlier. Last fall the deposits were reported 1½% under those of the previous spring.

Farm bank customers generally are continuing a favorable record of repaying loans on time, ABA said. The rate of tardy repayments recently declined a bit in the Corn Belt states compared with a 5% increase in delinquencies a year ago, ABA said.

In addition to livestock loans, farmers and ranchers are currently borrowing more for operating and living expenses and to refinance existing debts, the study showed. Requests for credit to finance farm purchases registered the smallest gain.

Abbott Officers Urge World Expansion of American Business

CHICAGO — American business must continue to expand throughout the world to check the "voracious" appetite of communism and to help maintain political and economic freedoms in non-communist countries, shareholders of Abbott Laboratories were told at the firm's annual meeting here.

Harold D. Arneson, president of Abbott International, said that "Europe, with its rapidly growing markets, is a source of profits, which is used by American business, including our company, to invest in less developed countries." In order to meet successfully the Soviet economic offensive in underprivileged areas, everything possible should be done to increase the flow of private investments to those areas, including the right to transfer profits and other income earned in Europe."

Edward A. Ravenscroft, executive vice president of Abbott Laboratories, said that between the years 1956 and 1961, 82% of Abbott base company earnings abroad were reinvested in underdeveloped countries and only 18% in mature industrial countries.

Mr. Arneson warned that this system of U.S. private investment abroad "is now threatened by tax legislation pending in Congress.

"Its main objective," he said, "is to tax foreign investments to the extent of denying American industry the right to participate in the world's economic growth, particularly by giving favorable tax treatment to income earned in Europe by American investors."

George R. Cain, Abbott president, forecast "moderately improved sales and earnings" for 1961 to result from "a higher level of business and better earnings" in the third and fourth quarters. "We expect at that time an increased volume in most of our established lines and from the introduction of new products."

Product Investigation

Mr. Cain said that the company has more products under investigation than at any time in the last five years, and "these should begin to come to the marketplace during 1962 and 1963." But he cautioned that "the drop in demand for vitamin products generally, plus the lowered price for antibiotics, will not be overcome easily or quickly."

Mr. Cain said that 1961 first quarter sales will be down about 6% from the record high first quarter of a year ago, while earnings will show a greater percentage decline.

In 1960 Abbott sales reached $126,000,000, 2.7% above the previous high in 1959, while earnings declined 4.8% to $3.16 a share.

Dr. Lowell T. Coggeshall, a vice president of the University of Chicago, was elected to the board of directors of Abbott Laboratories following the annual shareholders meeting. Reelected at the meeting were 15 incumbent directors headed by Elmer B. Vliet, chairman of the board; Mr. Cain, president, and Mr. Ravenscroft, executive vice president.

Mr. Cain announced that Laurence R. Lee, an attorney for Abbott Laboratories, has been elected assistant secretary of the company.

Maryland Traveler

COLLEGE PARK, MD.—Dr. Gerald F. Combs, University of Maryland poultry nutritionist, has been on four different overseas trips in recent months to take part in international meetings which he was asked to attend.

Human nutrition was the prime subject of a trip to Quito, Ecuador, as part of a U.S. government project. Last fall, he presented a paper at the International Feed Symposium in Madrid, Spain. More recently he was an American consultant to the Food and Agriculture Organization of the United Nations at a world fish meal meeting in Rome, Italy. Also, he recently took part in a school on physiology and nutrition of poultry and swine at the University of Nottingham in England.

Colorado Group Elects

DENVER, COLO.—Charles Miller, Colorado Milling & Elevator Co., was elected president of the Denver Feed & Grain Club at its annual spring stag here. About 70 members attended the event.

Other officers elected at the meeting were James Robb, Merrill Lynch, Pierce, Fenner & Smith, vice president; Kenneth Hammill, Basey Grain Co., secretary; and Art Shore of the Denver Grain Exchange, treasurer.

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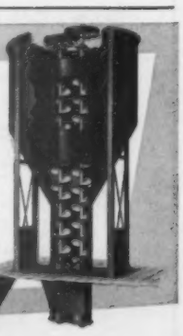

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CHICK HATCH

(Continued from page 1)

indicated a 12% increase in 1961 as compared with 1960. How actual hatch will compare with this is not yet clear. It is expected that the 1961 increase over 1960 will be less in succeeding months than it has been in the first few months of the year.

Egg-Type Chicks Hatched by Commercial Hatcheries

(000's omitted)

State and division	—January thru March— 1960	1961*
Maine	1,283	976
New Hampshire	728	939
Vermont	119	200
Massachusetts	3,545	3,967
Rhode Island	70	225
Connecticut	2,461	2,570
Northeast	8,206	8,877
New York	4,380	4,750
New Jersey	4,750	5,330
Pennsylvania	9,386	11,455
Mid-Atlantic	18,516	21,535
Ohio	6,450	8,400
Indiana	7,304	10,659
Illinois	7,413	9,213
Michigan	3,030	4,050
Wisconsin	2,799	3,575
East North Central	27,196	35,897
Minnesota	7,300	9,360
Iowa	8,930	13,310
Missouri	3,186	5,189
North Dakota	423	605
South Dakota	2,570	3,595
Nebraska	3,764	5,971
Kansas	2,550	3,535
West North Central	28,723	41,565
Maryland	349	601
Virginia	1,474	1,844
North Carolina	2,591	3,764
South Carolina	1,478	2,218
Georgia	3,365	4,042
Florida	3,021	3,932
South Atlantic	†12,447	†16,674
Kentucky	811	1,270
Tennessee	2,400	3,200
Alabama	1,565	2,942
Mississippi	1,153	1,529
East South Central	5,929	8,941
Arkansas	774	1,264
Louisiana	794	384
Oklahoma	1,585	1,970
Texas	6,683	9,546
West South Central	9,836	13,164
Idaho	601	663
Colorado	731	887
Utah	856	855
Mountain	‡3,067	‡3,474
Washington	3,055	3,196
Oregon	1,430	1,174
California	14,718	17,226
Pacific	19,203	21,596
U. S.	133,123	171,723

*Preliminary.
†South Atlantic total includes Delaware and West Virginia.
‡Mountain total includes Montana, Wyoming, New Mexico and Arizona.

Southwest Expects Sign-up to Be Big

DALLAS—The grain and feed industries of the Southwest expect a large sign-up of farmers under the new feed grain program. This outlook is much like that recorded in the Midwest (Feedstuffs, April 15, page 1).

Most tradesmen attending the April 14-15 convention of the Texas Grain & Feed Assn. were of the opinion that sorghum producers of the Southwest will take to the new program in large numbers. Some expect 80-85% of the growers to sign up for the acreage reduction-price support program.

TEXAS

(Continued from page 1)

million by 1970, the speaker said. By 1975, he told the Texans, there will be a need for 41% more eggs, 48% more milk, 53% more pork, 58% more poultry meat, 59% more lamb and 73% more beef. These calculations are based on federal forecasts. Eggs represent a problem, Mr. Glennon said, as per capita consumption is tending downward.

AFMA survey figures recently indicated that 68% of all feed is complete feed and 32% concentrate, Mr. Glennon said, in giving details of the report which was published recently. He predicted an industry that will have fewer, but bigger feed dealers, and greater service for the producer including help in establishing markets for his products.

The feed industry panel was part of a split session on the first day of the convention, and ran at the same time as a grain meeting. Other speakers on the feed panel were Floyd Deacon, B & D Mills, Grapevine, Texas; Sam Fine, Food & Drug Administration director for the Dallas district, and Reed McDonald, director of the Texas Feed Control Service.

Business Delinquency

"Business delinquency is like juvenile delinquency," said Mr. Deacon, "when an industry runs wild and produces more than is good for society." It is more difficult to market a product than it is to produce it, and this is a fact that seems to have been forgotten in the farm products field. Integration is producing this type of business delinquency, and warnings of trouble have been largely ignored, Mr. Deacon declared, yet some order will have to come out of this kind of year to year chaos, and feed manufacturers will have to become more realistic about production if they are to survive, he said.

Mr. Deacon also cited the declining per capita consumption of eggs, which he said has been forecast to hit a low point of 280 eggs per person by 1970, compared with 325 today and 389 10 years ago. Although the gains in population are expected to offset this slump in consumer interest, gross egg consumption will not gain as much as it should in the next 10 years unless some effort is exerted in the marketing field. In contrast with this, is the expected continued gain in per capita consumption of poultry meat which was 20.6 lb. in 1950, 29.2 lb. today and expected to be 35 lb. by 1970, according to figures quoted by the speaker.

Other Major Problems

Two other major problems facing the feed manufacturer, which brought comment from Mr. Deacon, are the new feed grain law, which he said is likely to provide a "built-in loss" for feed manufacturers who buy grain from farmers, and the Food and Drug Administration regulation of additives, which is giving many a headache. The FDA could help the feed industry considerably by publishing a clear listing of the drugs that are considered safe and that can be used, he said. He complimented the Texas Feed Control Service for printing lists of this kind and helping to keep feed people up to date.

Mr. McDonald explained certain portions of the Texas feed law and went into detail in connection with labeling. He said that the label, under the law, is more than just the tag or sack printing, but includes also any other material which accompanies the product when it is delivered. He also warned that new registrations must be filed when formulas are changed.

Mr. Fine reviewed the feed additives law and said that there are two types under control: (a) the accidental additives, which might result, for example, from pesticide contamination of a feed ingredient during its production period, and (b) deliberate additives for medication and other purposes in feed. Mr. McDonald said that in Texas additions to feeds must be proved not only safe, but also useful in the limited amounts specified.

New Drug Application

In the question and answer session which followed, it was brought out that conversations are underway between AFMA and FDA officials concerning the problem of shipping concentrates for remixing without the local dealer getting a new drug application clearance. Mr. Glennon said these conversations have been underway for about three months and that a favorable result is expected to be announced shortly.

In the grain industry review session, the speakers were Wallace Hyde, export manager, Cargill, Inc., New York; D. G. Nelson, U.S. Feed Grains Council, Washington, D.C.; and C. H. Moseley, chief of the Commodity Stabilization Service, Dallas. Each discussed some of the problems of marketing and exportation of grain and suggested future possibilities in this line.

In discussing the storage situation in Texas, Mr. Moseley cited figures showing a substantial increase in storage space in Texas this year. He indicated that the area would have enough space to take care of the expected larger wheat crop this year. Mr. Moseley said that about 25 million bushels is expected to be moved to the Texas-Oklahoma area from the Kansas City district, and that another 30 million can be anticipated to be moved from that area before harvest. It is too early to know just how much wheat will be moved within the Dallas district in the reconcentration program there, he said.

In a discussion of the box car situation, which followed, railroad representatives said the situation is much better than a year ago and that the railroad car service agencies believe that they can take care of any trade needs for cars during the movement.

Grain men indicated that the Texas crop looks exceptionally good and forecasts ranged from the government April 1 figure of some 90 million to over 100 million in the state. This compares with 84 million last year.

"Old Pro" Advice

William F. Brooks, president of the National Grain Trade Council, Washington, told the group that at this point the administration is listening to the advice of the "old pros" at the working level in the department of agriculture.

Officials of U.S. Department of Agriculture have assured the grain trade that they will not administer the feed grain program so as to reduce market prices from the 1960 crop, so no sales action is likely prior to Oct. 1, Mr. Brooks pointed out. He also pointed out that federal officials are thinking in terms of having certificates under the feed grain law redeemable in kind only from on-farm storage, government bin sites or elevators located adjacent to the county where feed grain certificates have been issued. This will tend to limit the negotiability of this paper and prevent disruption of normal trading practices as far as possible. CCC may encourage farmers, who are eligible for certificates, to accept cash payments for them, Mr. Brooks said, which also would limit the availability of this paper.

Mr. Brooks said he thought there would not be any change in the wheat program for the coming planting year, except that the support price level probably would be raised to around $2.

Clifford R. Hope of Great Plains Wheat, Inc., Garden City, Kansas, said his organization has set up several state wheat growers associations to carry out programs that were impractical for the individual organizations.

"No one in our organization has ever had the slightest idea of putting Great Plains Wheat into the field of actually marketing wheat, and the charter contains not one word which would authorize buying and selling of wheat," Mr. Hope said in explaining that the organization's funds could not be used for that purpose.

Grower, Trade Duties

While foreswearing buying and selling, there are things that have to be done by growers and those that have to be done by the grain trade, he said. In the former category, Mr. Hope classified market studies, trade barriers and transportation to name some of the activities now engaging his staff. The grain trade and growers' organizations can work together, he said, and if there are areas of disagreement which cannot be resolved, then the two groups can continue to disagree on those points but still work together on the more numerous things on which they can agree.

In a plea to grain men to pay more attention to politics, to public relations, to national affairs and to support of their own trade organizations, Ron Kennedy, vice president, F. H. Peavey & Co., Minneapolis, said that it is futile to carp at politicians for actions which arise out of the nature of politics, which he said is the art of compromise.

Free Market Process

The growing intervention of government in business affairs, Mr. Kennedy said, arises because the broad base of people are unconvinced that good things of life can be produced for them through a free market process, and most of those who favor the free market principle are not able to be convincing in their story through lack of understanding of it, or through giving the task no priority.

"Let us look real hard at how we, each in his own circle and in his own way, can influence coming elections in favor of the type of free market political climate we need if we are not going to wind up as mere government servants, to the eternal disadvantage of producers and consumers alike," Mr. Kennedy added. "This means being for the general use of a competitive factor to guide people and their resources into one line of work or another. This is the most workable and humanitarian way mankind has yet found to conquer environment.

"Keeping freedom is purely political. You who have grown up in a trade that is historically such a good example of freely competitive marketing have a big job to do in turning our politics in the right direction."

Election Results

Warren LeBourveau of the Mathis (Texas) Grain & Elevator Corp., was elected president. He served as first vice president in the past year. F. W. Higginbotham, Goodpasture Grain & Milling Co., Lubbock, was named first vice president and Monroe U. May, Paymaster Feeds, Dallas, as second vice president.

New directors, whose terms expire in 1963, are: Truitt Kennedy, Cargill, Inc., Ft. Worth; James Goddard, Champion Milling Co., Timpson; Kelton Shaw, Peterson Grain Co., Lockney; Robert Hilgenfels, Quaker Oats Co., Sherman; Don Riffe, Stratford Grain Co., Stratford, and Frank Bailey, Jr., Frank Bailey Grain Co., Ft. Worth.

Hold-over directors, whose terms expire in 1962, are: W. L. Newsom, Garvey Elevators, Ft. Worth; Walter Blanton, Blanton Grain Co., Carrollton; Frank M. Phariss, Producers Grain Corp., Amarillo; W. H. Nigh, W. H. Nigh & Co., Houston; Keith Peck, Allied Mills, Inc., Ft. Worth. Ray Bowden, Ft. Worth, is secretary-treasurer of the association.

Association members approved a resolution urging that the government continue the policy of merchandising grain through established grain channels, and pledging support to this objective with the desire of continuing the free enterprise system. Taking note of the frequent and uncertain moves by railroads to establish rates with restricted transit rules and destinations, the association also urged that such proposals be carefully studied by the association traffic committee with the aim that they influence such proposals in a manner to serve all members equitably.

Members also voted some changes in constitution and by-laws to correct technicalities, but voted one important change in that members are now authorized to institute arbitration proceedings with non-members, subject to agreement by both parties and subject to acceptance of such cases by the board. The board voted a new schedule of dues to go into effect May 1, and chose the Hotel Texas, Ft. Worth, April 26-28 for the 1962 convention.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

ALFALFA MEAL

Chicago: Demand and supply fair; trend $1 lower; dehydrated, 17% protein, 100,000 units vitamin A $48@49.50.

St. Louis: Demand fair; trend lower; supply ample; dehydrated, 17%, 100,000 A pellets $47.50, down 50¢.

Memphis: Demand fair to good; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $48, unchanged; reground pellets $51.60, down $2.

Portland: Demand slow; trend barely steady to lower; supply ample; 15% suncured $43@44, sacked; 20% protein dehydrated pellet meal $72, sacked.

Ft. Worth: Demand fair for dehydrated, slow for suncured; trend steady; supply sufficient; sacked: dehydrated, 17% to 20%, 100,000 A $52, truck or rail; suncured: 13% % in. grind, No. 1 $45, truck; 15% fine ground, dry $47, with 2% fat added $49, rail or truck, unchanged.

Los Angeles: Demand of dehydrated steady, suncured limited; trend steady; supply of dehydrated limited, suncured moderate; dehydrated meal, 17% protein, 100,000 A $51@52; dehydrated pellet meal, 17% protein, 100,000 A $53@55; suncured meal, 15% protein $43@44; suncured crumbles, 15% protein $45@46; all unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A pellets $53@54.

Buffalo: Demand fair to poor; trend steady; supply adequate; $44.10, Sacked, Boston, unchanged.

Kansas City: Demand slow; trend steady; supply ample; 17% dehydrated alfalfa, 100,000 A, pellets $45@48, reground pellets $46@49; 18% dehydrated alfalfa, 125,000 A, pellets $46@51, reground pellets $47@52; 20% dehydrated alfalfa, 150,000 A, pellets $49@57, reground pellets $50@58; dehydrated prices unchanged; suncured alfalfa, demand slow, supply ample, 13% pellets $32@34, No. 1 ¼-in. $38, sacked, unchanged.

Minneapolis: Market continues steady; 17% dehydrated, 100,000 units vitamin A reground pellets $51, delivered Minneapolis; oiled reground pellets $53.

Seattle: Demand fair; trend easy; supply ample; suncured, 15% protein $35, Seattle, down $10 (new crop); dehydrated, 150,000 A units $71, Seattle, no change (old crop).

Denver: Demand fair; trend steady to weak; supply ample; $46.

ANIMAL FAT (STABILIZED)

St. Louis: Demand good; trend firmer; supply tight; yellow grease 7¾¢ lb., delivered tank trucks or cars, steady.

Memphis: Demand good; trend steady to up; supply barely adequate; yellow grease 7¾¢ lb., up ¼¢; prime tallow 8¼¢ lb., down ¼¢.

Chicago: Demand good; trend off 12½@25¢; supply moderate; tank truck or carlot, bleachable fancy tallow 8¾ cwt.; yellow grease $7.37½ cwt.

Los Angeles: Demand slow; trend easier; supply adequate; 7½¢ lb., down ½¢.

Ft. Worth: Demand good; trend steady; supply moderate; prime tallow, tank cars 8@8¼¢ lb., drums 9¼@9¾¢ lb., f.o.b. north Texas packing plants with returnable drums, unchanged.

Kansas City: Demand fair; trend steady; supply tight; stabilized prime tallow 8@8¼¢ lb., off ¼¢.

St. Paul: Price off ½¢ as soap company buyers left the market at 8¢; 7¾¢ lb., f.o.b. producer's plant, for bleachable fancy; demand good, supply ample.

Atlanta: Demand good; trend strong; supply tight; 8¢ lb., f.o.b. Alabama and Georgia processing plants.

BARLEY FEED

Chicago: Demand and supply fair; trend firm; $36, sacked.

Baltimore: Demand and supply fair; trend unchanged; $46.50, sacked.

Los Angeles: Demand slow; trend weaker; supply adequate; $2.50 cwt.

Seattle: Demand fair; trend steady; supply good; $46, truck lots, unchanged.

Denver: Demand fair; trend steady; supply short; $2.05 bulk, $2.30 sacked.

BLOOD MEAL

Chicago: Demand improved; trend up $5; supply moderate; 80% protein $127.50, sacked.

Los Angeles: Demand slow; trend unchanged; supply adequate; $5.50 a unit of ammonia, sacked.

BONE MEAL (STEAMED)

Los Angeles: Demand fair; trend steady; supply ample; imported $80.75, 20 ton lots, sacked, unchanged.

Chicago: Demand fair; trend firm; supply moderate; $95, sacked.

Cincinnati: Demand fair; trend steady; supply ample; $95, sacked, Cincinnati, up $5.

Ft. Worth: Demand fair; trend steady; supply sufficient; domestic $100, sacked, f.o.b. Ft. Worth, unchanged.

Buffalo: Demand and supply fair; trend steady; $105, sacked, unchanged.

Seattle: Demand fair; trend steady; supply good; $92, f.o.b. car Seattle, sacked, unchanged.

Denver: Demand slow; trend down; supply ample; $117.

BREWERS DRIED GRAINS

St. Louis: Demand light; trend easy; supply plentiful; $35, down $1.

Los Angeles: Demand good; trend steady; supply limited; $51, unchanged.

Ft. Worth: Demand slow; trend lower; supply sufficient; 26% protein $51.90, sacked, down $2.

Chicago: Demand fair; trend steady; supply good; 26% protein $30.50@31.

Cincinnati: Demand poor; trend lower; supply adequate; $37.50, down $2.50.

Buffalo: Demand fair; trend steady to lower; supply good; $42.50, Boston, off $1.

BREWERS DRIED YEAST

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12½¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10½@12½¢ lb., ton lots, sacked.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Ft. Worth: Demand fair; trend steady; supply sufficient; 11½¢ lb., 5 ton lots, sacked, unchanged.

Los Angeles: Demand good; trend steady; supply limited; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 12¢ lb., less than ton lots; all sacked and unchanged.

Cincinnati: 9¢@10¢ lb., sacked.

Buffalo: Demand fair; trend weaker; supply ample; $8.50 cwt., off 25¢.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

CALCIUM CARBONATE

Los Angeles: Demand fair; trend steady; supply adequate; flour $9.85, 20 ton cars; meal $10.20, 20 ton cars; both sacked and unchanged.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $13.75; 100 lb. bags $13; bulk, boxcar $11.50; bulk, hopper $11; coarse grind $1 premium, delivered Minneapolis.

Ft. Worth: Demand normal; trend steady; supply sufficient; $4.50@5, f.o.b. north Texas, unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, sacked.

Denver: Demand and trend steady; supply ample; $14.95, carloads.

COCONUT OIL MEAL

Portland: Demand fair; supply ample; trend unchanged; 20% solvent $62.20.

Los Angeles: Demand poor; trend firmer; supply moderate; copra cake $65, up $2.

Seattle: Demand fair; trend firm; supply tight; solvent type $71, f.o.b. Seattle, sacked, unchanged.

CONDENSED FISH SOLUBLES

Los Angeles: Demand good; trend steady; supply limited; 3¢ lb., unchanged.

Ft. Worth: Demand fair; trend steady; supply extremely scarce; tank car, West Coast production $4.16 cwt.; dried fish solubles $146.60, unchanged.

Denver: Demand steady; trend rising; supply short; 3½¢ lb., West Coast.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $6 more)

Minneapolis: Feed $45.70, meal $76.70.
Atlanta: Feed $49.10, meal $80.10.
Birmingham: Feed $46.90, meal $77.90.
Boston: Feed $50.60, meal $81.60.
Chicago: Feed $39, meal $70.
Cleveland: Feed $47, meal $78.
Denver: Feed $49.30, meal $80.30.
Ft. Worth: Feed $47.80, meal $78.80.
Indianapolis: Feed $44.25, meal $75.25.
Kansas City: Feed $39, meal $70.
Louisville: Feed $45.55, meal $76.55.
New York: Feed $50.20, meal $81.20.
New Orleans: Feed $49, meal $80.
Norfolk: Feed $49.60, meal $80.60.
Philadelphia: Feed $49.80, meal $80.80.
St. Louis: Feed $39, meal $70.

COTTONSEED OIL MEAL

Ft. Worth: Demand slow; trend steady on old process, higher on solvent; supply adequate; 41% old process $57@58, f.o.b. mills Ft. Worth, unchanged; carlots, solvent, 2% fat added $58.60, delivered Ft. Worth, up $2; pellets $2 additional; hulls $12.50@13.50, unchanged.

Memphis: Demand fair; trend steady; supply ample; prime 41% protein, old process $56.50, up $1.50; new process, 41% protein $58, up $1.

St. Louis: Demand good; trend firm; supply ample; solvent $57.50, Memphis, up $1.50.

Chicago: Demand good; trend 50¢ up; supply fair; Memphis basis: hydraulic $57.50, solvent $57.50.

Portland: Demand good; trend higher; supply tight; 41% solvent $74.20.

Los Angeles: Demand moderate; trend steady; supply adequate; $57, unchanged.

Cincinnati: Demand fair; trend steady to higher; supply adequate; $65, up 50¢.

Seattle: Demand good; trend strong; supply ample; 41% expeller $71, f.o.b. car Seattle, up $4.

Atlanta: Demand good; trend stronger; supply limited; 41% $60 Georgia, $56 Alabama, Mississippi and Tennessee producing mills.

Kansas City: Demand good; trend steady to stronger; supply adequate; 41% solvent process $62.80, up $1; 41% old process $63.70, unchanged.

Buffalo: Demand and supply fair; trend higher; $78.25, sacked, Boston, up $3.

Denver: Demand good; trend strong; supply ample; $61.50, delivered.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $43.50 sacked, $40.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $61.25, sacked, 100 lb. multiwall bags, bulk $58.25; truck load $62, sacked, in 100 lb. multiwall bags, bulk $59, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $52, f.o.b. Tupelo in 100 lb. multiwall bags, $49 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $66 (or $3.67 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18% $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck lots of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%; maximum fluorine .19% $69.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $66.35 bulk ($3.65 per unit of P).

Ft. Worth: Demand fair; trend steady; supply sufficient; minimum 18½% phosphorus, maximum 31% calcium, maximum .18% fluorine $76.65, sacked, unchanged.

Cincinnati: 18% phosphorus, carlots $74.30, ton lots $84.30; 18% and 21% phosphate $62.50, ton lots $72.50, f.o.b. Cincinnati.

Seattle: Demand and supply good; trend steady; $93.50, ex-dock Seattle, sacked.

DICALCIUM PHOSPHATE

Seattle: Demand good; trend steady; supply limited; $91, ex-dock Seattle, sacked.

Buffalo: Demand and supply good; trend steady; $82.93, sacked, Boston, unchanged.

Denver: Demand fair; trend steady; supply ample; $88.50, delivered carloads.

Trenton, Mich.: 18½% P $83, bulk, boxcar/hopper car; $86, bagged, in less than carload lots; 21% P, $94.05, bulk, boxcar/hopper car; $97.65, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk, carlots and truck loads, 18½% phosphate $78 and 21% phosphate $89; packed in 100 lb. papers, 10 tons or more, 18½% phosphate $81 and 21% $92; lesser quantities, 18½% phosphate $91 and 21% $102; above prices per ton, f.o.b. Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $81 (or $4.38 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $81, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truck load $75.50, sacked in 100 lb. multiwall bags, bulk $72.50, f.o.b. Texas City.

Cincinnati: 18½% phosphorus $88.80, bagged in carloads; $98.70, bagged in ton lots, f.o.b. Cincinnati; $81, f.o.b. producing points.

Los Angeles: Demand fair; trend steady; supply adequate; 18½% phosphorus $95.10, sacked, unchanged.

Ft. Worth: Demand fair; supply adequate; $81.50, sacked, unchanged.

DISTILLERS DRIED GRAINS

Cincinnati: Demand poor; trend steady; supply adequate; $53, down $3@4.

Buffalo: Demand fair; trend lower; supply fair to good; $57, Boston, off $4.

Seattle: Demand good; trend firm; none available; $71, delivered truck lots, sacked, unchanged.

DRIED BEET PULP

Portland: Demand slow; supply ample; trend unchanged; $47.50, sacked.

Los Angeles: Demand good; trend steady; supply adequate; $44.90@46.

Buffalo: Demand and supply fair; trend steady to higher; $64, sacked, Boston, up 50¢.

Seattle: Demand good; trend steady; supply ample; $49, delivered carlots, sacked, unchanged.

Atlanta: Demand fair; trend steady; supply very limited; molasses $56.20, sacked, delivered; no plain pulp offered.

Denver: Demand light; trend steady to weak; supply scarce; $60.

DRIED BUTTERMILK

Chicago: Demand slightly improved; supply fair; trend 25¢ up; medium acid $9.75@10.25 cwt., sweet cream $9.75@10.25 cwt., both sacked.

Los Angeles: Demand fair; trend steady; supply ample; 13¾@14¢ lb., sacked, unchanged.

Buffalo: Demand poor; trend steady; supply ample; $10.55 cwt., unchanged.

DRIED CITRUS PULP

Los Angeles: Demand good; trend steady; supply light; orange pulp $43, lemon pulp $43, both nominal.

Buffalo: Demand poor; trend steady; supply adequate; $35, sacked, f.o.b. Florida, unchanged.

Atlanta: Demand fair; trend weak; supply good; pulp $32.50@35, sacked; meal $30, sacked; both f.o.b. Florida processing plants.

DRIED SKIM MILK

Ft. Worth: Demand fair; trend steady; supply adequate; $15.85 cwt., sacked, unchanged.

Los Angeles: Demand slow; trend steady; supply adequate; 14¢ lb., less than ton lots; 13¾¢ lb., ton lots, both sacked and unchanged.

Chicago: Demand and supply fair; trend unchanged; $10.75@11 cwt., sacked.

Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.

Buffalo: Demand fair; trend steady; supply ample; $11.35 cwt., unchanged.

Minneapolis: Unchanged at $12@12.25 cwt.

DRIED WHEY

Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.

Los Angeles: Demand fair; trend steady; supply adequate; $5.18 cwt., carloads; $5.35 cwt., l.c.l.; both sacked and unchanged.

Chicago: Demand fair; trend firm; supply ample; $4.50@4.85 cwt., sacked.

Ft. Worth: Demand fair; trend steady; supply adequate; carlots, standard $5, sacked, delivered Ft. Worth; ton lots $5.25, f.o.b. warehouse Ft. Worth, unchanged.

Minneapolis: Supply ample; demand good; price holding steady at $5.15 cwt.

Kansas City: Demand fair; trend steady; supply adequate; $5 cwt., sacked, unchanged.

Seattle: Demand steady; trend easy; supply good; $5.85 cwt., ex-warehouse, l.c.l., unchanged.

FEATHER MEAL (HYDROLYZED)

Los Angeles: Demand good; trend steady; supply limited; $1 a unit protein, sacked, unchanged.

Ft. Worth: Demand fair; trend higher; supply limited; 85% protein $75@77.50, up $2.50@5.

Atlanta: Demand good; trend stronger; supply sold out for April; $70, f.o.b. Georgia and Alabama processing plants.

FISH MEAL

Ft. Worth: Demand good; trend higher; offerings extremely light; sacked: 65% protein Peruvian, nominal $111, up $4; supply of menhaden exhausted.

Portland: Demand fair; trend stronger; supply tight; $1.80 a protein unit, sacked.

Chicago: Demand very strong; trend sharply higher with prices up $3@8; supply very light; sacked: menhaden, East Coast $106, Gulf $106; menhaden scrap, East Coast $102, Gulf $102; Canadian herring meal $1.65 a unit of protein.

Los Angeles: Demand and trend steady; supply light; local production, 60% protein $1.80 a unit, sacked, unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; $106.10.

Minneapolis: Demand good; supplies fair; 60% West Coast blended, steady at $135, sacked, delivered; 70% Canadian herring, steady at $1.57½, f.o.b. West Coast, subject to production.

Buffalo: Demand fair; trend higher; supply very light; 60% protein menhaden $115 bulk, $120 sacked, both up $2.50.

Seattle: Demand good; trend firm; supply ample; $1.70 a unit protein, f.o.b. truck Vancouver, B.C. (Canadian production) up 10¢ a unit.

Atlanta: Demand good; trend strong; supply limited; 60% menhaden $110, sacked, Gulf, subject to catch.

Denver: Demand good; trend rising; supply short; $1.75 a protein unit, West Coast.

HOMINY FEED

St. Louis: Demand good; trend firm; supply ample; yellow $36.50, up $2.50.

Los Angeles: Demand good; trend easier; supply adequate; hominy meal $46, down $4; hominy pellets $48, down $4.

Chicago: Demand strong; trend $1.50 higher; supply fair; $36.50.

Cincinnati: Demand fair; trend steady to higher; supply adequate; $38, up $1.50.

Kansas City: Demand fair; trend stronger; supply ample; white or yellow $32@33, up $1.

Buffalo: Demand and supply fair; trend higher; $44.50, Boston, up $2.

Seattle: Demand good; trend steady; supply limited; $51, delivered carlots, sacked, unchanged.

LINSEED OIL MEAL

Los Angeles: Demand and supply limited; trend unchanged; local production, 31% protein $71, unchanged.

Ft. Worth: Demand slow; trend steady; supply sufficient; 34% protein, extracted $69.70 April, $70.70 May, about unchanged.

Chicago: Demand better; trend $1@1.50 up; supply modest; Minneapolis basis: solvent $55@55.50, expeller $60.50.

Portland: Demand slow; trend $1 ton higher; supply ample; 34% solvent $85, sacked.

Buffalo: Demand fair to good; trend higher; supply fair; $55.50, Minneapolis, up $2.

Cincinnati: Demand poor; trend higher; supply adequate; new process $55.50, old process $60.50, Minneapolis, both up $2.

Minneapolis: Market moved stronger under pressure from soybean meal; 34% solvent advanced to $55.50 from $53.50; 32% expeller advanced to $60.50 from $60.

Seattle: Demand fair; trend steady; sup-

ply good; 34% protein (Montana) $85, delivered carloads, sacked, unchanged.

Denver: Demand fair; trend steady; supply ample; $65, Denver.

MEAT AND BONE MEAL

Seattle: Demand good; trend strong; supply limited; $2.05 a unit protein, ex-processing plant, sacked, up 5¢ a unit.

St. Paul: Supplies adequate; demand good; trend steady; $94@97, sacked.

Kansas City: Demand good; trend firm; supply tight; 50% $92.50, up $2.50.

Denver: Demand fair; trend strong; supply scarce; $87.50.

Buffalo: Demand fair; trend firmer; supply light; 50% meat scraps $92.50 bulk, $97.50 sacked, both up $2.50.

Ft. Worth: Demand good; trend higher; supply limited; meat and bone, 50% $90 bulk, $92.50 sacked, f.o.b. Ft. Worth, up $7.50.

Portland: Demand good; supply tight; trend unchanged; 50% $102.50@105, sacked.

Memphis: Demand good; trend steady; supply adequate; 50% protein $92.50, without billing, up $7.50; 50% protein $96, with rail transit, up $6.

Chicago: Demand better; trend $5 higher; supply moderate; 50% protein $92.50, sacked.

St. Louis: Demand good; trend firm; supply adequate; 50% $92.50, up $7.50.

Los Angeles: Demand steady; trend firmer; supply limited; 50% protein $1.90 a unit, up 5¢.

Cincinnati: Demand good; trend stronger; supply fair; 50% meat and bone scraps $91, Cincinnati, up $6.

MEXICAN PHOSPHATE

Brownsville, Texas: Mexican natural ground rock, 13% phosphorus $39 sacked, bulk $2 less; 14% $43 sacked, bulk $2 less.

MILLFEED

Minneapolis: Market advanced again this week; sacked bran up $2.50 to $43.50, bulk $5 less; sacked middlings up $1.50 to $42.50, bulk $3 less; sacked red dog up $1 to $45.

Kansas City: Demand fairly good; trend firm; supply tight; sacked bran $40.50@41, up $3.50; sacked shorts $40.50@41, up $3.50; bulk bran $33@33.50, up $2; bulk shorts $34.50@35, up $2.50; bulk middlings $34.50@35, up $2.50.

Ft. Worth: Demand good; trend strong, especially on shorts; offerings light; bran, bulk $41, burlaps $47.50; gray shorts, bulk $42, burlaps $49; bulk middlings $42, delivered Texas common points; $2 up on bulk bran and shorts, $3 up on sacked bran, $4 up on sacked shorts, $2.50 up on middlings.

Chicago: Demand strong; trend $2.50@3 higher; supply moderate; standard bran $40, standard midds. $41, red dog $43.50.

St. Louis: Demand good; trend firm; supply ample; sacked, bran $44, shorts $44, up $2.50; bulk, bran $37, middlings $38, up $2.

Cincinnati: Demand fair; trend steady; supply adequate; bran $44, middlings $45, bran up $1.50, middlings up $2.50.

Buffalo: Demand good; trend higher; supply fair; middlings $44.50, f.o.b. Buffalo, up $5; red dog $47, f.o.b. Buffalo, up $5.

Memphis: Demand fair; trend steady; supply ample; wheat bran $39.80, gray shorts $40.80, standard midds. $40.80, all up $2.

Seattle: Demand fair; trend firm; supply ample; $39, delivered common transit points, carlots, unchanged.

Denver: Demand fair; trend steady; supply ample; shorts $44, bran $44, millrun $44.

Los Angeles: Standard millrun $43@44, up $1, demand fair, trend firmer, supply moderate; red bran $49@51, unchanged, demand slow, trend steady, supply ample.

MOLASSES

Memphis: Demand fair; trend steady to higher; supply ample; blackstrap 14¢ gal., tank car, f.o.b. New Orleans, unchanged; $31, delivered Memphis, truck, unchanged.

Buffalo: Demand fair to good; supply fair; trend steady; 16½¢ gal., f.o.b. Albany, unchanged.

St. Louis: Demand fair; trend firm; supply ample; 14¢ gal., tank cars, New Orleans, up ½¢ gal.

Ft. Worth: Demand fair; trend steady; supply sufficient; blackstrap 14½¢ gal., f.o.b. Houston; truck $31.07, delivered Ft. Worth, seller's market price on date of shipment, unchanged.

Los Angeles: Demand good; trend steady; supply limited; $25.50, f.o.b. tank cars; $25.75, f.o.b. tank trucks; both unchanged.

Cincinnati: Demand fair; trend steady; supply adequate; 14@14½¢ gal., New Orleans, up ¼@1¼¢ gal.

Minneapolis: Market unchanged; blackstrap $35, tank truck, delivered; beet $31, blend $33.

Kansas City: Demand fairly good; trend firm; supply available; blackstrap 14¢ gal., f.o.b. New Orleans, unchanged.

Atlanta: Demand good; trend stronger; supply limited; citrus $18@20, f.o.b. Florida processing plants.

Seattle: Demand and supply good; trend firm; $25.75, f.o.b. Seattle, tank truck lots, unchanged.

OAT PRODUCTS

St. Louis: Demand good; trend firmer; supply ample; white pulverized $41, unchanged; reground oat feed $13, up $1.

Ft. Worth: Demand slow; trend steady; supply sufficient; 10% protein oat millfeed $42.50, up 50¢; reground $21.50, sacked, unchanged.

Kansas City: Demand and supply adequate; trend steady; oat mill by-product $14@15, sacked, unchanged; feeding rolled oats $67@70, sacked, unchanged.

Buffalo: Demand and supply fair; trend steady to higher; oat feed $24.75, sacked, Boston, up 50¢.

Chicago: Demand and supply fair; trend steady to $1 off; reground oat feed $11; No. 1 fine ground feeding oatmeal $65; feeding rolled oats $69.

Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $44@50.

Minneapolis: Market unchanged; sacked feeding rolled $74; sacked feeding oatmeal $61; sacked pulverized $41; sacked crimped $58; sacked oat feed $20.

Seattle: Demand and supply fair; trend easy; oat feed $56, delivered truck lots, 38 lb. or better, down $1.

PEANUT OIL MEAL

Los Angeles: Demand good; trend steady; supply limited; $80.50, sacked, unchanged.

Atlanta: Demand good; trend stronger;

(Turn to QUOTES, page 96)

Major Markets Roundup

Bean, Alfalfa Meals Dip; Most Items Advance

This week's ingredient market tone was generally stronger. Outside of fluctuating soybean meal prices and downward trends in grain high-protein feeds and alfalfa meal, prices were in an advancing mood.

The accompanying table of average national price changes from April 11 to April 18 shows a gain of about $2 for soybean oil meal, but later price declines in this item weakened the market. Partly because of the previously rising bean meal market, the other oilseed meals gained favor and their prices advanced.

Strong gains in animal protein feeds and in millfeeds were recorded during the week. A lift in molasses values resulted mostly from the strained relations between the U.S. and Cuba.

East

BUFFALO: The ingredient market was fairly strong last week. The Commodity Credit Corp. still is offering corn but the market worked higher and prices moved up 2¢. Oats were in a good statistical position and prices gained 1-1½¢, but other ingredients are expected to keep them from swinging too far out of line. Barley rose 1¢ and feed wheat held steady.

Soybean oil meal (44%) declined $1 but 50% soy edged up 50¢. Linseed oil meal continued to attract interest and prices rose $2. Cottonseed oil meal advanced $3.

Fish meal and meat scraps were up $2.50.

Distillers grain dropped $4 and brewers grains declined $1. Hominy feed advanced $2. Alfalfa meal held steady but levels are expected to work lower soon.

Millfeeds climbed on consistent demand and tighter supplies. Bran gained $4 and middlings and red dog advanced $5.

Feeds: Average Bulk Prices and Index of Weighted Prices*
(dollars per ton)

	April 18, 1961	April 11, 1961	Change from previous week
OILSEED MEALS			
Prices at prin. mkts.:			
Soybean meal	82.85	80.95	+1.90
Cottonseed meal	60.25	58.30	+1.95
Linseed meal	62.20	63.15	— .95
Copra cake or meal	58.50	57.50	+1.00
Peanut meal	54.00	52.50	+1.50
Index	97.7	95.5	+2.2
ANIMAL PROTEIN FEEDS			
Prices at prin. mkts.:			
Meat meal	91.35	85.75	+5.60
Tankage	89.60	84.40	+5.20
Fish meal	103.50	103.50	...
Index	80.7	77.2	+3.5
GRAIN HIGH-PROTEIN FEEDS			
Prices at prin. mkts.:			
Gluten feed and meal	50.55	50.55	...
Dist. dried grains	55.70	55.70	...
Brewers dried grains	39.60	40.45	— .85
Index	78.2	78.3	— .1
WHEAT MILLFEEDS			
Prices at prin. mkts.:			
Bran	41.40	39.50	+1.90
Midds. and shorts	41.70	39.40	+2.30
Index	75.1	71.3	+3.8
OTHER MILLFEEDS			
Prices at prin. mkts.:			
Hominy feed	38.50	37.60	+ .90
Rice bran	29.00	29.50	— .50
Index	59.5	58.6	+ .9
ALFALFA MEAL			
Prices at prin. mkts.	50.85	51.40	— .55
Index	97.9	98.9	—1.0
MOLASSES, FEEDING			
Prices at prin. mkts.	27.76	27.28	+ .48
Index	82.6	81.2	+1.4
ALL FEEDSTUFFS			
Index	87.4	85.2	+2.2
FEED GRAINS			
Prices at prin. mkts.:			
Corn	37.00	36.50	+ .50
Oats	42.90	42.60	+ .30
Barley	41.40	41.40	...
Grain sorghums	37.00	36.00	+1.00
Index	60.6	59.9	+ .7

*Base period of index is 1947-49.
Source: USDA.

Midwest

CINCINNATI: The recent wide gyrations in soybean oil meal prices took what several local feed manufacturers described as a "queer twist" last week. After having advanced steadily during recent weeks to a high of $79 in the local market, prices then fell back this mid-week to $74@75.

Otherwise, at least seven of the more important feed ingredients either moved up nominally or quite sharply on price, while only two ingredients, brewers and distillers dried grains, were quoted at lower prices.

Most pronounced of the ingredient price advances were those for meat proteins which moved up $5 ton for bone meal and tankage, and $6 for meat scraps. These increases were ascribed to scarcity of meat proteins in relationship to current demands and the advancing prices of many grain proteins.

Other ingredients for which price increases were reported this mid-week included cottonseed oil meal, 50¢; hominy feed $1.50; bran $1.50, and middlings $2.50.

Most local manufacturers ascribe the current price fluctuations either to market speculation or recent sizeable foreign purchases of several of the more important feed ingredients.

CHICAGO: Some of the great strength in the beans themselves and in both soybean meal and oil the past week or 10 days has evaporated to some degree, especially in the case of old crop soybean futures where the May sold down as much as 26¢ bu. from the season's high level of $3.34½ made a week ago. However, since then, close to half of the extreme price spillout has been erased in that delivery. The reported working of 50,000 tons of bean oil to Spain (equivalent to better than 9 million bushels in terms of soybeans) was a most potent item in helping us to bring about the recovery.

On April 17 beans broke a dime per bushel in the pit (the limit for one day's trading) and for the first time in years, the meal also sustained a limit break of $5 per ton. The bad break the first day of the week resulted in a cut of more than 10 million bushels in the open interest in bean futures and this in turn was followed by another slash of 6 million bushels the next day. This liquidation on the part of longs on April 17 and covering operations by shorts on April 18, accounted for a net decrease of between 16 and 17 million bushels within the confines of two successive sessions which, if not a record, must be mighty close to one.

Trade in bean meal futures on the Chicago Board of Trade has broadened out materially. For instance, on April 17 and 18 there were over 5,000 lots of 100 tons each traded in which would account for an aggregate of half a million tons. In all probability this constitutes a record volume for two successive days. Even with this terrific turnover, the open commitment in bean meal at the Chicago Board of Trade was still very substantial at 11,283 lots.

ST. LOUIS: Dealings in feed ingredients were in fairly good volume with prices generally firm to higher. Gains were most pronounced in animal proteins as raw materials were reported to be in limited supply. Demand for nearby shipment soybean meal continued good, particularly on 50% meal for use in broiler feeds; 44% meal was in more generous supply.

Smaller mill offerings of millfeeds helped give a daily lift to prices. As millfeeds continued to hold in an attractive price range in relation to other ingredients, buyers kept offerings fairly well cleaned up. Alfalfa meal was easier, with the nearness of new crop offerings the main factor in the easiness. Generally, there was no urgency on the part of buyers and purchases usually were for nearby shipment.

MINNEAPOLIS-ST. PAUL: As in other major markets, soybean meal and alfalfa meal dipped this week, but most other items gained strength.

The downturn in bean meal came late in the week. Beans and meal in the option trade had moved to rather high levels earlier. Cash meal did not move with the option, but there was a much weaker undertone and buyers took a "wait-and-see" attitude. On April 19, 44% soybean meal for shipment to this market was quoted at $68.50 ton, bulk Decatur; 50% was quoted at $74 ton, bulk Decatur.

Approaching availability of new crop alfalfa meal about the first week in May weakened trade in this commodity. Reground bulk pellets, 17% protein, were quoted at $49 ton, bulk, delivered, April 19.

Linseed meal gained strength mainly because of the wide differential between its price and soybean meal. The April 19 quote for 34% linseed meal was $55 ton; 32% was listed at $60, both bulk, Minneapolis basis.

Animal protein feeds bounced higher, again partly because of the sky-high soybean meal prices at the week's outset.

Millfeeds advanced during the week. Both bulk bran and bulk middlings were trading at around $35.50 @36.50 ton, Minneapolis, April 19. Buying was stimulated by the relative cheapness of millfeeds.

KANSAS CITY: Prices on feed ingredients this week have been mixed. Soybean meal ended up the week on a soft tone with prices down $2@2.50 for the week; 50% soybean meal remained tight, however, and premiums for this item widened out to $8@10 over 44% in extremes.

Meat proteins and fishmeals have firmed up during the week as these ingredients have attracted more interest as substitutes for soy. Cottonseed meal prices are mostly unchanged but demand for cottonseed meal has been good as a replacement for soy in formulas where it can be used.

Alfalfa meal prices were nominally unchanged in spite of the nearness of new crop production.

Wheat millfeeds were strong for

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the week with the strength stemming mostly from the slower flour grind rather than the urgent demand.

South

MEMPHIS: Most ingredients showed fair to good demand here during the past week.

Just before new crop dehydrated alfalfa meal was available in southern Missouri, Arkansas and Tennessee, buyers held off purchases where possible. Inventories were reduced in mill stock and apparently demand for new crop production will be good.

Improvement was noted in millfeed business for bulk middlings, indicating somewhat better feed demand. Sacked feed was said to have moved only fair.

The tone in blackstrap molasses was stronger because of the uncertainty of supplies for the balance of the year. Buying for immediate shipment was reported fair.

Although prices remained high for animal fats, they were in demand from feed mills. Meat and bone meal usage was up again due to the rapid advance in 50% soybean oil meal. Supplies were termed inadequate in poultry by-products in this territory for full usage by all feed plants.

Rice by-products moved slowly, with the price unchanged.

Oilseed Meals

Cottonseed oil meal demand picked up, primarily because of the wide discount under soybean oil meal. After good business earlier, soybean oil meal eased. The wide swings in soybean oil meal futures and soybeans discouraged cash purchases.

Oilseed meal futures wound up in irregular fashion on the Memphis Board of Trade April 18, compared with one week earlier.

One of the sharpest advances in a couple of years took place part of the period. Then, however, weakness in soybeans sent prices toppling downward. Improvement in cash business helped in the rise, along with reduced crushes.

Continued interest in broiler replacements reportedly has encouraged the trade in maintaining consumption of oil meal at higher levels.

Eastern Trunk Line soybean oil meal closed April 18 $2 ton higher than on April 11; unrestricted soybean oil meal closed $1 lower to $2 higher, and bulk solvent cottonseed oil meal closed unchanged.

Trading volume for the week totaled 5,200 tons of unrestricted soybean oil meal and 300 tons of bulk solvent cottonseed oil meal.

ATLANTA: Major feed ingredient buyers are finding it difficult to obtain many of the materials they need. Good buying interest caused cottonseed and soybean meals to advance $2-3 ton this week. It was reported that some oil mills have found out they are over-sold in cottonseed hulls and are trying to buy back from the dealers. This has resulted in an increase of as much as $4 ton in the last two weeks.

Heavy supplies of citrus pulp have caused many producers to reduce prices. Many have dropped their asking prices to $32.50, f.o.b., hoping to stimulate some demand. But they have had little success. There is still a good supply of ground snap corn available at cheaper prices.

West

FORT WORTH: Offerings of packinghouse products were light this week; and meat and bone meal gained $7.50 and tankage advanced $5. Millfeeds also were tight and offerings of shorts were especially light; bran was up $2@3 and shorts up $2@4. Fish meal was almost unobtainable and nominally $4 higher. The limited offerings of poultry byproducts and feather meal were quoted $2.50 to $5 higher. Oat millfeed was 50¢ higher, but in slow demand.

Only brewers dried grains and 50% soybean meal were quoted lower than previous week, with the former $2 lower and 50% soymeal down $1.50. Other ingredients were quoted unchanged and demand fair.

Feed grains were about unchanged with the exception of milo which was $1 a ton higher, with an improved demand.

SEATTLE: Prices of corn, barley, oats and milo were virtually unchanged this week.

Concentrates were generally quite strong. Soybean meal was at its highest level for several years. Meat meal has advanced from $1.50 per unit of protein to $2.05 per unit in the past two months. Herring meal has also been very strong, advancing from $1.35, Vancouver, B.C., to $1.70.

Linseed meal and copra meal have remained generally unchanged for six months. Cottonseed meal has strengthened. Expeller meal was quoted at $75, Seattle; 41% solvent at $76 and 44% solvent, $84.

PORTLAND: Oregon, Washington and Idaho feed ingredient prices averaged moderately higher during the week ended April 18. A check of trade sources indicated that trading of principal ingredients was on the spotty side with the demand in the most part still limited to immediate and nearby needs.

The pace continued to be set by oilseed and animal protein meals with closing prices for these averaging higher. However, soybean meal listings actually finished unchanged to $1 ton lower for the week.

Soybean meal values fluctuated within a narrow range, with 44% protein testing meal finishing $1 ton lower, while that testing 50% protein was unchanged at the close. Trade reports indicated that mixers are still substituting other lower priced oilseed meals for soybean meal.

Animal protein feedstuffs were firm to strong as a reflection of tight offerings and a dependable demand. Meat and bone meal advanced $1 ton while fish meal listings gained 5-10¢ a protein unit.

Other feedstuffs were barely unchanged during the sluggish trade. Feed grains were mostly unchanged except for 50¢ ton advances for milo and corn.

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QUOTES

(Continued from page 95)

supply limited; 45% $54, f.o.b. Alabama, for solvent; no old process available.

POULTRY BY-PRODUCTS

Los Angeles: Demand good; trend firmer; supply limited; $1.65 a unit of protein, sacked, up 5¢.

Memphis: Demand good; trend steady to up; supply inadequate; 55% meal $97.50, sacked, without billing, up $7.50.

Ft. Worth: Demand good; trend higher; supply very scarce; $90, sacked, f.o.b. north Texas plant, unchanged.

Atlanta: Demand good; trend stronger; supply limited; meat meal $87, f.o.b. Georgia and Alabama processing plants.

RICE BY-PRODUCTS

Los Angeles: Demand and supply limited; trend easier; California production, high fat content, bran $50, sacked, unchanged.

Memphis: Demand slow; trend steady; supply ample; bran $29, f.o.b. Arkansas points, unchanged.

Buffalo: Demand fair; trend steady; supply ample; bran $50.60, Boston, unchanged.

Ft. Worth: Demand fair; trend steady; supply sufficient; rice bran $32@33, f.o.b. south Texas rice mills, sacked; hulls $5, sacked, unchanged.

Atlanta: Demand fair; trend steady; supply limited; bran $43@44, sacked, delivered.

SCREENINGS

Chicago: Demand fair; trend steady; supply ample; ground grain $31.50; Canadian $26, sacked.

Los Angeles: Demand fair; trend steady; supply light; ground barley $35, sacked, unchanged.

Buffalo: Demand fair; trend lower; supply good; ground, sacked $29, New York, lake and rail, off $1.75; unground $24, New York, off $1.50.

Cincinnati: Demand poor; trend steady; supply adequate; unground grain screenings $15@16, Cincinnati.

Minneapolis: Demand and supply fair; Canadian $15; domestic lights $14@8, domestic mediums $10@18, domestic heavies $18@26; 15% flax screenings steady at $36.

SOFT PHOSPHATE

(Sacked, delivered)

Atlanta: $20.65.
Buffalo: $25.50.
Chicago: $24.96.
Cincinnati: $23.64.
Des Moines: $25.42.
Kansas City: $25.07.
Memphis: $22.28.
Minneapolis: $26.12.
Philadelphia: $24.51.
St. Louis: $24.32.

SOYBEAN OIL MEAL

Buffalo: Demand and supply fair; trend steady to higher; 44% soybean oil meal $72, Decatur, off $1; 50% soybean oil meal $81.50, Decatur, up 50¢.

Kansas City: Demand slow; trend easier; supply ample; 44% solvent process $72.50 @73, Decatur, down 50¢.

Los Angeles: Demand slow; trend easier; supply adequate; $92.60@94.60, down $1@3.

Memphis: Demand poor; trend steady; supply ample; prime 44% solvent $77, f.o.b. Memphis, up $5.

Chicago: Demand good; trend off 50¢@$2; supply ample; Decatur basis: 44% protein, unrestricted billing $75, E.T.L. $72.50; 50% protein, unrestricted billing $84, E.T.L. $81.50.

St. Louis: Demand good; trend firm; supply limited; 44% $74, down $1.50; 50% $85, up $3.

Ft. Worth: Demand fair; supply limited; 44% $81.50 April, $82.50 May, unchanged; 50% $90 April, $91 May, down $1.50.

Portland: Demand fair; supply tight; trend unchanged to $1 lower; $96.60 for 44% protein test with 50% at $103.60.

Cincinnati: Demand poor; trend steady; supply adequate; $74@75, Decatur.

Seattle: Demand fair; trend strong; supply ample; $96.20, delivered carlots, up $6.

Minneapolis: Prices off $1@2 this week; 44% off $2 at $69.50, Decatur; 50% off $1 at $76.50.

Atlanta: Demand good; trend steady; supply limited; 44% $82, delivered.

Denver: Demand fair; trend strong; supply ample; $87.

TANKAGE

Cincinnati: Demand good; trend strong; supply good; 60% digester $95, Cincinnati, up $5.

Chicago: Demand improved; trend up $5; supply light; 60% protein $95, sacked.

Ft. Worth: Demand good; trend strong; supply scarce; 60% digester $95, sacked, Ft. Worth, up $5.

St. Paul: Demand good; supplies fair to ample; prices backed off slightly from the $9@10 advances noted last week; $89@92, sacked, compared with $93@96 last week.

Kansas City: Demand good; trend firm; supply tight; 60% digester $91@92.50, up $1.50.

UREA FEED COMPOUND

Woodstock, Tenn.: Minimum 42% nitrogen, 262% protein equivalent; $100, bagged, f.o.b., freight equalized with nearest producing plant; bulk $96.

Pryor, Okla.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk cars or trucks, freight equalized with nearest producing point.

Belle, W. Va.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk cars or trucks, freight equalized with nearest producing point.

LaPlatte, Neb., and South Point, Ohio: Minimum 42% nitrogen, 262% protein equivalent, $100 ton, f.o.b. bagged; $96 ton, bulk, cars or trucks, freight equalized with nearest producing point.

Lima, Ohio: Minimum 42% nitrogen, 262% protein equivalent $95, f.o.b., bagged, down $5.

Cincinnati: Minimum 42% nitrogen, 262% protein equivalent, carloads or truck loads $100 delivered, bagged; less than carloads or truck loads $115.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; trend steady; supply limited; 7¾¢ lb., f.o.b. north central Texas, unchanged.

Los Angeles: Demand slow; trend steady; supply adequate; 7¾¢ lb., unchanged.

WESTERN

(Continued from page 4)

"Reasonably safe forecast of population increases indicates a total increase in American population of perhaps 40% by 1975 or 1980. Productivity should double in that time. This would mean, from the productivity increase alone, a net increase in the demand for poultry and eggs of about 10%. Added to the increase in population, the market for these products should be nearly 50% above present levels."

The economist said that it is essential that the downtrend in egg consumption be countered. He commented, "It is especially important to hold and to expand the breakfast market." He suggested that development of new convenience types of products is important. He also noted that consumers are placing considerable importance on the size and grade of eggs.

THE CHALLENGE—PAST AND FUTURE—In tracing the industry's progress, Dr. Mehren commented. "The poultry industry has become one of the leaders in the development of new production and distribution techniques. Generally, the producers, processors and distributors in the industry have weathered the storms of economic change without assistance or control by government."

After comparing the past decade and the present one, he said, "Looking ahead, there appears to be tremendous potential in the future growth of markets, new technologies not yet used and changes occurring in the industry structure."

"The unfortunate price and income history of 1959 produced some desperation programs designed to 'do something or anything.' Although most segments of the industry across the country appear to be opposed to any proposals for broad-scale government intervention, some activity developed in favor of proposed poultry enabling legislation on a national basis. Interest in these proposals seems to have diminished with the economic upturn in the industry in 1960 but might be revived should there be any possibility of a repetition of the 1959 difficulties."

THE NEW DECADE GETS UNDER WAY—Dr. Mehren noted that consumers ate record quantities of poultry meat in 1960—29.2 lb. of chicken and 6 lb. of turkey per person—and said that consumption is likely to increase in 1961.

He traced the growth of consumption of poultry meat and compared it with red meat. He pointed out that broiler consumption rose from 8.7 lb. per capita in 1950 to an estimated 24.0 lb. per capita in 1961 for a 176% increase. Other figures for the same period of time are: Total chicken, 20.6 lb. up to 30 lb., for a 46% increase; total poultry, 24.7 lb. up to 36 lb., for an increase of 46%; beef and veal, 71.4 lb. to 96.2 lb., an increase of 35%, and total red meat, 145 lb. to 165 lb., for an increase of 14%.

He stated that there seems to be a growing competitive relationship of both turkeys and broilers to prices of red meat, especially during the holiday-period markets. He also stated that production of turkeys, as well as broilers, appears to be related to prevailing credit terms.

He noted, "Greater caution with respect to credit for turkey production has been reported in most parts of the U.S., with the West as an exception. Generally speaking, credit for estimated expansion is already largely extended. From all indications, it would seem that even if production of turkeys should increase only 10% in 1961 rather than the 15% as predicted, substantially lower prices will result."

THE OLD DECADE AS A BASIS FOR THE NEW—In tracing the recent past and present of the poultry industry, Dr. Mehren said it was of

value since "One of the ways in which projection into the future can be made is to build upon the experience of the past. Long trends can be estimated by reference to preceding years and frequently the changes of the next few years can be foreseen, at least roughly, in terms of changes currently occurring."

The California economist said that one of the major technological revolutions in agriculture has been the development of virtually new methods of production and processing and substantially new types of industries in both poultry and eggs. He added that these specific changes in production methods and organization seem to have become models for similar developments in other parts of the food and farming industries.

Production Enterprises — Stating that there have been basic changes in the production units for both eggs and poultry, he noted that there are still some 2 million farms producing eggs, but that specialization is increasing. He stated, "Generally, the scale of the enterprise is rising sharply and the number of units producing these products is declining. In areas like southern California, an enterprise producing 60-70 cases per week is no longer considered a large-scale organization. All evidence points to further increase in size, decrease in numbers and sharp change in technology in the future."

Technology—In the area of technology, he cited the increase in lay per hen. He commented, "The average annual production of eggs per layer in California in 1925 was only 138. It had risen to 229 eggs per layer per year in 1959, with only a slight decline to 225 in 1960. This pattern is general all over the U.S. There has been an equally dramatic and continuing increase in the output of eggs and of poultry and turkey meat alike per unit of feed input. The record of increase in production per unit and especially the record of increasing efficiency in feed conversion reflect dramatic technological changes in all aspects of meat and egg production."

Capital—On the subject of capital, the California professor said, "As a result of technological change and the increasing scale of enterprise, capital requirements are some three to four times greater than 15 years ago and appear still to be increasing. Apparently, the margin per dozen or the margin per pound available for operation has decreased as a function of increased efficiency and increased interregional competition. This appears to be another stimulus leading toward increasing scale in the production of eggs and broilers as well as in the hatchery segment of the industry."

Production Areas — "Perhaps one of the most fascinating phases of the poultry and egg industry in the past decade," according to the economist, "has been the development of essentially new types of industries in new areas. These new industries, with a completely different structural form from those earlier prevailing, seem to have served as guides for development of new types of products and production processes in other farming areas."

Interregional Competition — He cited interregional competition in the poultry industry including the development of broiler production in the Southeast setting a "national example for the quick and efficient development of a new industry" and the less spectacular development of egg production centering around major metropolitan areas. He pointed out that the increase in eggs has been the greatest in the western region, especially California and said it is probable that California will be on the verge of a continuing surplus status by 1965.

He said, "A significant shift of production from the traditional Midwest supply areas has already occurred. Thus far, no substantial production of eggs in the southeast broiler area has yet developed, but many people consider that egg production in the Southeast on a contract or similar basis may yet become an important matter.

"Both the output of eggs and the average size of flocks in California have increased relatively at the fastest rate. Even so, there appears to be greater prospect for contract and integrated output of eggs in the Southeast than in the West. There is some ultimate possibility that southeastern eggs may be marketed in the middle Atlantic area. If this were to occur, then production from the Middle West—mainly the Minnesota-Iowa area—could be foreclosed from the New York market. This, perhaps, could lead to accelerated and sharpened competition of Midwest producers with those on the coast."

He noted intra-California competition for the industry, pointing out sharp changes in the localization of egg and broiler production within the state. "All indications in all areas point toward even larger scale units, higher capital requirements and clearly defined need for even greater management skills," he remarked.

PROCESSING AND MARKETING—Turning to the area of processing and marketing, Dr. Mehren commented, "Sharp changes in production size, method, organization and location have been paralleled by equally sharp changes in processing and marketing. Quite naturally, the production and location changes could not have occurred without related or coordinated change in the processing and marketing elements of the industry, and vice versa."

Quality Control—He rated quality control as one of the most important developments of the past decade and said that emphasis on quality control is increasing at an accelerated rate into this decade. Of the reasons he mentioned for this is the contracting of about 15% of the U.S. egg production. He said, "Reports in trade publications indicate that the need for maintenance of quality control at the retail level is becoming equally clear."

Retailer Operations — He stated that producers and processors are beginning to specify and to find means to control quality by influencing handling and selling methods of retailers. It was also noted that refrigeration is becoming a general requirement in all states.

Competing Products — Coming changes in the red meat industry may mean even more changes in production and marketing of eggs and poultry, the economist said. He noted, "It is possible that these industries will depend more upon traditional financing as scale increases beyond the capacity of enterprises for self-financing.

"Production effects of the steady decline in per capita consumption of eggs have already appeared. This declining per capita consumption rate has been especially provocative of difficulty in years of low price and high purchasing power when sales normally should expand sharply. Some analysts imply that eggs have fallen to a lower level of importance in breakfast menus. Others hold that the promotion of differentiated breakfast foods has cut into egg markets, especially since it is difficult effectively to differentiate eggs and perhaps even to promote them. It may be that general preference shifts with respect to foods in general areas at issue. Finally, unfortunate references to cholesterol and similar maters may have adversely affected the demand for eggs."

MARKETS AND PRICING—Turning to the area of markets and pricing, Dr. Mehren noted that as in all other parts of the food industry, and especially in standardized or specification items of a perishable nature, there has been a sharp increase in direct marketing to retailers, bypassing the old handlers and the central markets.

Technical Changes — Associated with these changes have been increases in automation to cut costs, new candling and handling methods and more control over production, processing and handling to obtain desired quality control at the retail level, he commented. "These technical changes may perhaps be major reasons for current changes in contract or other relations among different functional levels as a means of coordinating activity and assuring production of the desired quality."

Decentralization — The economist noted that there has been a sharp decentralization in pricing functions with price ceasing to be the major signal for adjustment in volume of output or type of production and direct communications or contracts replacing the impersonal price signals of the old central markets.

Industry Organization — He commented that industry organization in both eggs and poultry is tending to resemble more closely a manufacturing business. He stated, "The issues then arise as to whether the independence of the farm operators should be maintained and whether this is consistent with the requirements for large-scale operation within an industry and within a food system in which large scale operations become more general. There is some concern over the fate of the family operations. If the enterprise remains fully independent, then it must take risks to parallel its independent decisions. It must also find the appropriate capital and management to obtain a scale of operation large enough to permit effective competition on a cost basis. These are some of the reasons underlying the current interest in the industry with respect to the possibilities of many different types of group action whereby the benefits of scale can be obtained for individual producers without complete destruction of individual independence."

CHALLENGE AND OPPORTUNITY—Generally speaking, there is a favorable long-run market in prospect both for eggs and poultry, opportunities emerging from the troubled past, he commented.

Preferences and Needs — He emphasized the importance of countering the downtrend in egg consumption. He said holding and expanding the breakfast market is especially important. New products also are being sought.

Competition—Competitive relationships between poultry and eggs and red meats may be sharpened by industry changes now occurring in red meat areas, he commented. "Certain elasticity relationships can specify the degree of competition among these products," he noted. "Thus, for eggs it is pretty well known that a 10% increase in income will result in a 2% increase in per capita sales if no other determinants of sales change at the same time. A 10% increase in price of eggs seems to lead to about a 13.5% decrease in per capita sales, again with no change in sales determinants other than price. A 10% increase in price of large eggs seems to be related to about an 8.6% net increase in the sale of small eggs. Competition within eggs and with other products may be one of the major market determinants of the next decade."

TECHNOLOGY AND COST—Similar challenge and opportunity rest in future changes in technology and production costs so clearly rooted in dramatic technological changes.

Product and Terms — The fundamental necessity in both broilers and eggs is to meet the new consumer-retailer requirements, involving specification of the product itself and delivery terms. Producing units which have failed to adjust to new policies have shortly thereafter ceased to exist.

Quality Control — Quality control during the entire market process has been stressed. Producers must aim at specific markets and must give quality and delivery terms required. Marketing probably will continue to center near consumer areas. Appropriate scale of enterprises must be achieved.

MARKET STRUCTURE — Scale and coordination among parts of the industry are already general. Direct communication has almost completely replaced the old price markets. The necessity for bargaining strength is clearly understood. Questions still remain regarding possibilities of group activity and the role of government.

Individual, Group or Government— Throughout the West, efforts are being made to improve the position of producer groups by developing various bases of coordinated group activity. Ultimately the issue of individual, group or government activity must be resolved by the people directly concerned.

PRODUCTION, CONSUMPTION AND THE FUTURE—From 1952 onward, California and the West seem to have moved toward a surplus situation. California egg production increased almost 60% from 1952 to 1960. Even with the population increase, the increase in consumption has fallen short of production. There may be a sharp decrease in price if a full surplus status occurs. Price now is about equal to Chicago plus transfer costs. If a surplus developed, price would approximate Chicago minus transfer cost. However, it is doubtful that a full surplus status will ever be reached. Northern California is now a deficit area, while southern California seems to have reached a surplus situation. The northern intermountain area is still a big producing area but declining with respect to surplus. There is an increasing deficit in the Southwest as a whole. The Pacific Northwest is roughly in balance. The western states as a whole are on a variable import basis.

California egg production is increasing faster than population. Simple extrapolation would indicate that the whole region would soon be on a surplus basis. Total average transfer cost for imports from the Midwest seem to be about 6¢ doz., so there is a total locational advantage of 6¢. If there were a full surplus, California price would change from Midwest plus transportation to Midwest prices minus transportation from California to the Midwest.

Thus a range of 12¢ doz. at the retail level could be associated with a change from surplus to deficit basis, or vice versa. A 12¢ decrease in retail price would yield about a 10% increase in sales. This, however, would absorb the surplus. Production adjustments from a 12¢ decrease in price would really mean that the danger of a full-surplus basis is relatively remote. So there are two clear limitations to western expansion in eggs. There will probably be temporary and seasonal surpluses and therefore wide fluctuations. Consequently, there seems to be in the West a need for marketing agencies adequate to avoid wide price swings. Continuing efforts are being made to develop such agencies.

U.S. prices appear to be in a generally stable relationship with different geographic markets. As for many crop products, San Francisco and Los Angeles quotations seem frequently to be out of line with transfer costs. There appear to be wider Los Angeles price spreads with respect to size and grade classifications. Generally there is less variability in spreads. This may represent inadequate market structures or inadequate price reporting. Market structures seem to differ substantially in the West for both eggs and broilers.

The long-run prospect and perhaps the biggest challenge in eggs is the continuing danger that California and western states will balance on the edge of a surplus status. The prospect for sharper interregional competition in eggs in the future is clear.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
February 11	1,133	524	897	707	106	855	2,070	2,400
February 18	1,185	395	949	765	122	816	2,013	2,220
February 25	1,191	390	956	743	102	767	1,939	2,427
March 4	1,184	414	710	819	99	843	2,115	2,076
March 11	1,170	404	908	777	130	722	2,092	2,046
March 18	1,229	468	928	854	80	749	2,138	2,186
March 25	1,242	434	861	893	101	842	2,172	2,427
April 1	1,214	494	815	891	126	823	2,276	2,582
April 8	1,263	548	868	967	104	850	2,124	2,632
April 15	1,234	512	915	972	120	787	2,250	2,583

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
February 11	1,199	369	3,834	426	7,211	260	4,032	3,020
February 18	1,195	462	4,099	422	7,521	238	4,188	2,979
February 25	1,026	529	3,984	412	7,655	223	4,404	3,085
March 4	973	465	3,895	480	7,668	227	4,649	2,860
March 11	1,238	510	4,008	404	7,681	259	4,737	2,952
March 18	1,327	600	4,112	449	7,739	279	4,954	2,958
March 25	1,465	649	4,304	433	8,441	257	4,951	3,288
April 1	1,340	649	4,442	476	8,747	291	4,921	3,294
April 8	1,477	753	4,398	553	8,981	262	4,875	3,426
April 15	1,489	621	4,477	487	8,902	344	4,928	3,364

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1961	Total 22 areas 1960
February 11	4,694	496	2,549	359	273	1,293	38,707	34,497
February 18	4,711	501	2,760	373	253	1,377	39,544	34,392
February 25	4,827	556	2,707	352	264	1,426	39,965	34,604
March 4	4,664	508	2,816	413	305	1,486	39,669	34,954
March 11	4,621	608	2,860	350	355	1,473	40,305	35,168
March 18	4,926	620	2,950	358	265	1,533	41,697	35,468
March 25	5,269	600	3,087	401	352	1,475	43,944	35,637
April 1	5,499	658	3,274	367	250	1,443	44,871	34,870
April 8	5,448	598	3,280	363	248	1,422	45,440	34,708
April 15	5,604	623	3,094	398	293	1,516	45,513	34,980

TURKEY

(Continued from page 6)

the long-run view is optimistic.

"Our basic objective is to try to produce and market at a level that will result in an equitable profit for every phase of our industry," he commented. "Competition is strong in all segments of the industry. Those who do an efficient job and who keep up to date with new methods and new equipment will receive a fair profit for their investment of time, money and labor."

Like Slat Floors

Members of the panel on management and housing liked slat floors for raising turkeys. They said slat floors cut work 50%, save on litter and keep turkeys clean. The panelists said that with slat floors a wider distribution of feeders and waterers is needed for good feed conversion. For starting turkeys they advised using litter paper over the slat floors and commented that it disappears through usage in about three weeks when the birds no longer need the protection.

On the subject of environment control, the panel members said that ordinary housing is fine for poults but that special insulated houses with plenty of ventilation are needed for broilers. They advised use of proper volume of air without drafts. The panelists said they liked automatic ventilation because of the rapid temperature changes in that area of the country.

The nutrition and feeding panel pointed out a lack of research on the best feed for turkeys that will be breeding stock. They said that the feed makes no difference up to 16 to 18 weeks of age. But, after that they advised a holding or medium energy ration. Breeders do not need the higher energy, finishing rations and the grower can save money if he decides how man breeders he needs and picks them early, the panelists advised.

On the subject of pre-starter the panel members said that a 24-25% protein ration is almost as good as a 30-32% protein pre-starter. However, they noted that less vigorous poults could well use a 32% ration. One panelist strongly favored a 32% protein feed for the first few days and a 30% formula for the first three to four weeks.

Marketing panel members indicated that some chain store operations are already featuring turkey in advertising. However, it was pointed out that some of them are still working on last year's crop.

Foreign Market

Panelists said that turkey producers cannot rely on foreign markets to take care of the over-production expected this year without subsidy.

Members of the disease control panel said that they felt it was definitely a risk to use eggs from breeders that have had air sac in the growing period.

They rated cholera bacterin as being "very effective in stopping a good many of the cholera outbreaks." They commented that the manufacturer recommends the use of bacterin as a preventive rather than a cure, but noted that excellent results have been achieved by using it as a cure.

Most of the panel members expressed a doubt of the value of antibiotic injections of day old poults to prevent PPLO.

NUTRITION AND FEEDING PANEL—Shown here are members of the nutrition and feeding panel at Yieldmor Feeds' recent turkey clinic at Piqua, Ohio. Left to right in the photo are: Dr. M. G. McCartney, moderator, Ohio Experiment Station, Wooster, Ohio; Dr. E. C. Naber, Ohio State University; Roy Roberts, Purdue University professor of dairy manufacturing and poultry science; Earl Wolstenholme, Yieldmor representative; John Heiby, Yieldmor representative, and Dr. Sherman Cummings, Ohio Experiment Station.

WALNUT GROVE

(Continued from page 6)

improve our sales and service methods as well as the quality of our sales personnel through recruiting and sales training."

1960 Business

Reviewing 1960 business, Mr. O'Connor pointed to consolidated net sales of $17,980,686, which compare to sales of $17,917,627 during 1959, and he told stockholders operations for the year produced net earnings after taxes of $680,963, second highest on record.

Stockholders reelected 11 directors and named a new member. Reelected were: E. A. Kelloway, J. J. O'Connor, M. D. Livengood, Clair D. Becker, Dick Bell, Boyd Cambridge, H. M. Herbert and Peter A. Kelloway, Atlantic, Iowa; E. M. Hunt, Lincoln, Neb.; Peter W. Janss, Des Moines and P. H. Kelloway, Anita. John L. Bunce, Atlantic, is the new member of the board, replacing C. A. Zellmer, who was named treasurer emeritus for the company.

The honorary title was bestowed upon Mr. Zellmer in recognition of 41 years of service as a member of Walnut Grove's board of directors. He also served many years as treasurer of the company.

Following the stockholders meeting, the board elected the following officers for 1961:

E. A. Kelloway, chairman of the board; J. J. O'Connor, president; M. D. Livengood, executive vice president and treasurer; Clair D. Becker, vice president; Dr. Damon V. Catron, vice president; John L. Bunce, assistant to the president; C. C. Hansen, secretary, and Peter A. Kelloway, assistant secretary.

CONDEMNATION

(Continued from page 7)

this is a problem on which additional work must be done."

Mr. Miller commented that inspection often is blamed for the unexpectedly higher condemnations of turkeys for disease causes and trimming due to breast blisters and contamination.

Poult Sources

He added, however, that USDA officials believe that the higher incidence of diseased turkeys in 1960 was partly due to "lack of attention to the source of the poults." Mr. Miller personally concluded that "the most important single factor contributing to disease in all classes of poultry is the parent stock of the chick or the poult and the sanitation practices of the hatchery.

"There seems to be ample evidence that some of the high condemnations came from flocks where little or no attention was given to the parentage or source of poults.

"In this area it was said that breast blister trimming was excessive in 1960. Dr. Willie, who is in charge of our inspection work, and others visited the area, and found that trimming was not in excess of that required to comply with the inspection obligation. However, in 1961 we are hoping that most processors will chill their turkeys prior to trimming where there is no problem of cross-contamination.

"We feel that if this practice is followed trimming losses can be greatly minimized. However, such a practice would not be possible where trimming involves open or purulent lesions, or where contamination is due to fecal matter, etc. This is a problem of plant operations. It was aggravated in 1960 by the attempt of many plants to expand beyond the capabilities of their facilities."

Disease Observation

Another point related to condemnations which Mr. Miller made: "Inspection has an excellent opportunity to observe the beginning of disease conditions which may be of major concern if proper steps are not taken to prevent their growth."

Mr. Miller related that demand for USDA's poultry grading program has expanded greatly each year. "This, in my opinion, reflects the fact that the need for this service is built upon a sound foundation by providing a common denominator for transactions between buyers and sellers."

Price Outlook

About the turkey price outlook for 1961, Mr. Miller observed: "A 1961 crop numbering 95 to 100 million birds (the size forecast) can not be marketed at 1960 prices. It would be wishful thinking to assume that expanded exports or larger school lunch purchases would take up the expected increase in supplies. . . . Demand for turkeys, both at home and abroad, can be increased, but not sufficiently to take up the slack of an annual production increase of 15-20%.

"I believe the use of turkeys in schools can be increased. I also believe export demand for turkeys can be expanded. But whether there is such an expansion and how fast such an expansion takes place depend largely on the actions of the turkey industry itself."

TOP OF THE HOPPER

(Continued from page 2)

production practices of tomato growers. This, said Dr. Jasper, is no longer true. California tomato growers have become specialists in their business and often know more about proper production techniques than processors' field men. Similarly, poultrymen who now rely on servicemen for help could eventually find themselves in the same position as the tomato growers.

Tomato processors have disintegrated from the business of supplying seeds or plants to producers. Several independent firms grow practically all tomato plants and seeds for growers now. The tomato growers have become financially stronger, too, and standard credit institutions provide most of the credit needs, with canners doing less financing than formerly.

California canners now grow virtually none of their own tomatoes, although at one time the reverse was true. The change results largely from the fact that growers are producing such satisfactory crops that canners have little incentive to grow any of their own, Dr. Jasper notes. And it is relatively simple to contract for enough production.

EGG PRICE MOVEMENTS in 1959 and 1960 confirm the fact that farm prices for this commodity are super-sensitive to changes in supplies, Thomas C. Morrison, University of Connecticut extension economist points out. From 1958 to 1959, a 2.8% increase in production was associated with an 18.8% decrease in price, while in 1960, a decrease of 2.7% in production was associated with an increase of 12.5% in price. "All changes in price cannot be attributed to changes in supply, but because there have been no observable shifts in demand which would account for these variations in price, it appears that the variations in supply were primarily responsible," he comments.

MARKETS

(Continued from page 2)

week, although they still figure substantially less than soybean meal on a per unit of protein basis.

Broiler producers continue to feel the profit squeeze consisting of a 16-17¢ lb. market and increased feed costs. This industry is hopeful of a 18-19¢ market, but fear these present price levels may continue into the summer months.

Cattlemen, experiencing a downward market trend of about $1-1.50 cwt. from a month ago, were extremely disappointed when the price did not advance after the Easter holiday as previously forecast. However, most feedlots are staying flexible, increasing cattle numbers slowly, and predicting a steady to upward market price during the next few months.

New crop barley grown in the Imperial Valley should be ready for harvesting the first week of May. It is predicted a good portion of this crop will be stored and sold later in the year as is the normal custom.

Unfortunately the local barley crop surrounding the Los Angeles area has almost disappeared due to poor moisture conditions. Many users will be leaning towards northern California or Texas for an adequate supply this year.

Southwest

Formula feed business in the Southwest was reported as only on a par with the previous week and in some instances mixers reported a slight drop in business. For the most part, backlogs into next week are at a minimum.

The seasonal demand for pig feeds and chick rations is holding well and starter rations are moving out well. Turkey rations are selling in volume and these items are making up for the loss in cattle feed shipments. Broiler prices in producing areas have not been good but sales of broiler feeds continue at a heavy pace.

Price lists for most feeds will be unchanged with higher prices in some ingredients being offset by lower levels in others.

Ohio Valley

What was described by several manufacturers as "crazy" fluctuations during the last week for a wide variety of protein ingredients has kept the market for virtually all types of feedstuffs in such a state of uncertainty that farmers are refusing to purchase more than the minimum tonnages required for immediate consumption by their flocks and herds. Feed manufacturers are, of course, in a like position, not knowing how soon ingredient prices will become more stabilized.

Continued cold weather with frequent snow flurries during the last week almost completely stopped the growth of fodder crops, although the below-freezing temperatures have so far caused only minor damage to fruit crops, which fortunately were not far enough advanced to be nipped by night time frosts.

While the unsettled price situation with respect to dairy and hog feeds has caused many thousands of valley farmers to delve into their surpluses of corn for hog and cattle feedings, the market for chick and turkey starter feeds continues in a more satisfactory position, and prospects are quite bright for an increase in demand for these feeds during coming weeks.

Pacific Northwest

Trade sources at Portland and Seattle reported that the past week's formula feed sales averaged good despite a continued seasonal decline in movement of dairy and beef cattle feed. This, they explained, was because of larger poultry feed purchases throughout the region.

Biggest dairy industry news was the announcement on April 15 by Portland's Dairy Cooperative Assn. that it was lowering the retail price of milk by 2¢ a quart for the Portland and Salem milkshed and passing this on to the producer for a $1.12 cwt. cut.

This is said to be the sharpest Portland-Salem milkshed price decline in some 30 years. It comes at a time when the Oregon and Washington milk-feed ratio is only fair but is steadily favoring the farmer because of seasonally good pasture conditions.

The Portland egg-feed ratio also became less favorable to the producer as the result of a 1¢ doz. decline in producer egg-paying prices this week. AA large eggs brought them 32-35½¢ doz. at Willamette Valley producing points and 30-32¢ doz. for A grade large, following the decline.

Portland and Seattle alfalfa hay prices were difficult to determine and covered a wide $28 to $33 a ton range, depending upon degree of weather damage.

Mountain States

Feed volume is holding steady for this time of year. Cattle feeding is dropping off as the cattle are now starting to move out onto the ranges, but poultry feeding is picking up strongly, especially in turkeys and broilers. Feed prices are stronger, especially protein ingredients.

Central States

Despite the fact that prices were readjusted upward during the past week or 10 days, formula feed manufacturers were reporting that sales volume was just a trifle better the past week than it was the one just preceding. However, there were spots in which sales resistance to the price boost was being noted, especially by people who have been inclined to feel that the recent advances in high protein constituent feeds—all the way from soybean meal to fish meal—could not be maintained.

While business has been described as "good," it is not exceptionally brisk. Compared with a year ago, demand appears to be somewhat broader currently.

The standard 40-hour work week is being well maintained over the area in processing plants and any further seasonal broadening in demand is almost certain to be reflected in some overtime. While some flour mills have been reporting scanty shipping instructions on flour, this has not been the case among commercial feed manufacturers.

The moderate betterment reported has not been lodged in any one line of feeds. Chick starter demand has been hampered very slightly by the widespread snowstorms over the area and the return to lower temperatures, but this seems to be over now. There is good call for hog feeds. Low broiler prices might be expected to restrict broiler type feeds, but so far this has not been particularly noticeable.

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Channels."

"Establishing Egg Price Conditions on the Los Angeles Market" will be discussed by H. B. Clemons, officer in charge, Federal-State Market News, Los Angeles.

Featured as chefs at the noon chuck wagon barbecue will be Dr. F. R. Rollins and Prof. H. B. Hinds, both of the university's poultry department.

In the afternoon Dr. Rollins will speak on "Effect of Carton Overwraps on Holding Quality of Eggs," and "Floor Space for Laying Hens" will be discussed by Dr. B. L. Reid, poultry science department, University of Arizona.

William Jasper, assistant commodity director, American Farm Bureau Federation, Chicago, will speak on "Research Production and Marketing of New Products—A National Effort," and the last speaker, Dr. A. A. Kurnick, head, poultry department, University of Arizona, will discuss "Vitamin A Requirement for Growing and Laying Pullets."

A tour of the university's poultry research center will climax the day's festivities.

130,000 BU. ELEVATOR

GERALD, OHIO — The Gerald Grain Assn. has approved plans for a new grain elevator with a capacity of 130,000 bu. The facility will be of slip-form construction and will include a new 750-bu. dryer.

Exclusive Franchise

STILL AVAILABLE FOR GOOD DEALERS IN SOME AREAS

No matter how good your present program is, your customers must make money if you are going to be permanently successful. To do this in the feed business, a feed dealer must have not only a good feed, but also his customers must have good breeding stock, good equipment and good housing. Eventually someone will sell all four in your area—it might as well be you!

No other major feed company in America has this kind of a program to offer a dealer. WRITE, PHONE or WIRE for DETAILS.

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